4.6 Road Going Vehicle, Pedestrian and Heavy Vehicle Interaction - 50/30 Rule

4.6.1 50/30 rule

The intention of the 50/30 Rule is to provide separation during the interaction of heavy vehicles with Road Going Vehicles (RGV) and pedestrians.

The 50/30 rule applies in all operational areas where RGV's and pedestrians are intending to interact with heavy vehicles. Heavy Vehicles intending to interact with RGV's are required to apply the 50/30 Rule.

The 50/30 rule does not apply to:

a) Designated park-up areas where a physical barrier is in place and a clearly defined work area exists

b) Vehicles passing or overtaking on haul roads in normal operational conditions

c) Workshop hardstand areas will be controlled as per section 6 Mine Maintenance Workshop

d) Other work areas with specific additional controls specified in a Procedure, Standard Work Instruction or JHA approved by the Mining Engineering Manager or delegate.

e) Emergency response requirements

4.6.2 50/30 Zones around Heavy Vehicles

The zones around heavy vehicles are measured from the external perimeter in all directions at 50m and 30m respectively and provide the following restrictions:

- 50m – Entry and interaction is restricted for personnel and RGV's.
- 30m – Entry, parking and approaching Heavy Vehicles is restricted

Refer to Figure 3 for a diagram of the zones around a heavy vehicle.

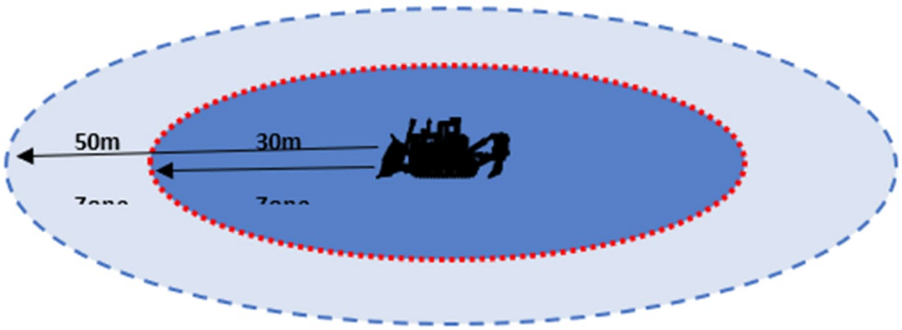

Figure 3: 50/30 Zones around Heavy Vehicle

4.6.3 Application of the 50/30 Rule

4.6.3.1 Requirements to enter the 50m Zone

a) Approaching person makes positive radio communication informing the heavy vehicle operator of intentions.

b) The heavy vehicle completes a Controlled Stop.

4.6.3.2 Requirements to park and enter the 30m Zone

a) The operator of the heavy vehicle will be on the ground.

b) For drills only, the operator will be on the deck with the ladder lowered.

c) All RGV's will park outside the 30m Zone. Maintenance and service vehicles are exempted however the heavy vehicle must be isolated or under exclusive control as soon as practical while the RGV is within the 30m zone.

(i) If a heavy service vehicle intends to park inside the 30m zone while a maintenance RGV is parked within the zone, the heavy service vehicle operator must assess the location of the RGV with the intended travel route so that the RGV is behind a physical barrier or has the equipment being serviced acting as a barrier. The service vehicle operator must remain at 50m if the RGV is not protected from the intended travel path and request the RGV to either

a. to be relocated out of the 50m zone

b. to be relocated to a position adjacent the vehicle being serviced (not behind) such that it acts as a barrier to the intended travel path.

The service vehicle may then enter the 50m zone and park within the 30m zone after the RGV has been relocated and pedestrian(s) have relocated to a safe position.

If space is restricted and the maintenance RGV is required to re enter the 50/30m zone after the service vehicle has safely parked and the operator is on the ground, the service vehicle must not move from its position until the RGV has exited the 50m zone.

4.6.3.3 Completing the interaction

a) The heavy vehicle operator is to remain on the ground until the RGV or Pedestrian is out of the 30m zone.

4.6.3.4 Requirements for approaching and working around unattended heavy vehicles

a) Attempt positive radio communication with the heavy vehicle

b) Verify the heavy vehicle is unattended

c) Contact relevant supervisor to undertake work in the work area

d) Establish a controlled area with barricading

4.6.3.5 Requirements for passing through the 30m zone

Where limited operational space requires that a RGV needs to pass through the 30m zone of a heavy vehicle as the only option for access, the following applies:

a) Heavy vehicle maintains the Controlled Stop

b) The RGV is not to stop within the 30m zone unless further positive communication with other equipment is required.

c) The RGV makes positive radio communication with the heavy vehicle when clear of the 30m zone.

4.6.3.6 Requirements at the CHPP

Any vehicle approaching CHPP equipment i.e. reclaimers and stackers shall notify the CHPP control Room Operator. No Vehicle is to park in the travel zone of the CHPP equipment unless:

a) The yard equipment is isolated; or

b) The vehicle is not in the line of fire.

c) All access or work conducted on any of the CHPP Coal Stockpiles shall be in accordance with MAC-CPP-PRO-014.

4.6 Tipping

4.6.1 Tipping Over a Berm and Dumping Sequence

Approaching the Tip Head

i. It is also important that dump dozer operators AND truck operators remain aware of each other on the dump at all times and any other equipment and light vehicles.

ii. Trucks will cycle clock-wise when preparing to tip and should cycle no closer than 20 metres from the tip head edge due to the uncompacted material on the dump edge.

iii. Truck operators should check the tip head for any signs of cracking / instability and any windrows which are below half wheel height standard.

iv. If signs of instability or below standard windrows are observed, notify the supervisor and dump dozer and dump in an alternative area or tip short if directed.

v. Truck operators should maintain a Minimum SAFE DISTANCE of 20 metres from the dump dozer when passing around them. Positive communication must be established if these requirements cannot be met.

Normal Dumping Sequence

i. The normal dumping sequence progresses with trucks approaching in a clockwise direction and dumping from the right hand side of the dump to the left hand side.

ii. Dozer operators shall ensure that adequate indicators are in place on the dump to ensure that truck operators know where loads are to be tipped. These indicators maybe in the form of a “wing”, a load of material or a partial load. In the case of tipping on the “rip line”, a rip line or small windrow maybe used to indicate the required location of the loads.

iii. Truck operators shall ensure that they confirm with the dozer operator where the load is required if the indicators are not present or if they are unsure of where the load is required to be tipped. Truck operators must ensure they have visual conformation of the location of the dozer before reversing.

Figure 12: Example of indicator and positioning of equipment on a dump

iv. Trucks must maintain a minimum 20m from the dozer whilst reversing to the tip head and dumping. Positive communication between the dozer and the truck must be established if interaction is required within 20m unless the dozer is stationary and “spotting” on the onside of the truck in which case positive communication is only required if interaction is less than 10m.

v. If the dozer has a wing is in place as a separation control, 20/10m separation does not apply providing the equipment is separated by the wing

vi. Berms shall be not used as a stop when reversing up to a dump.

vii. Truck braking distance should be maximised to reduce dump movement created by sudden braking. Additionally the trucks should not be overloaded. This will put much less force on the dump crest and promote stability.

viii. Trucks must position themselves at 90 degrees to the windrow prior to dumping.

ix. When tipping in corners, a tipping wing shall be established or spotting by the dump dozer as a guide to reverse. Trucks should tip at 45□ into corners.

x. If no wing or spotter is present in a corner, if the corner is not square or if the windrow is below standard, all loads must be dumped short (minimum 10m)

xi. If double / multiple tipping is required, trucks must maintain 20m separation. Positive communication must be established if trucks are within 20m.

xii. When double / multiple tipping, the normal process is that trucks on the cab side leave first. Positive communication must be established if trucks on the offside pass trucks on the onside out of sequence.

xiii. As the dump sequence approaches the left hand side of the dump, the dozer operator will communicate to the trucks within the circuit to start dumping at the start (right hand side of the dump). Any other direction from the dozer operator whilst dumping on the offside must be adhered to.

xiv. When the dozer operator has completed work in the left hand corner of the dump, the dozer operator will position themselves outside the interaction zone until such time a safe work area on the right hand side of the tip can be established.

xv. The dozer operator will establish a new tip wing and the dumping sequence repeats.

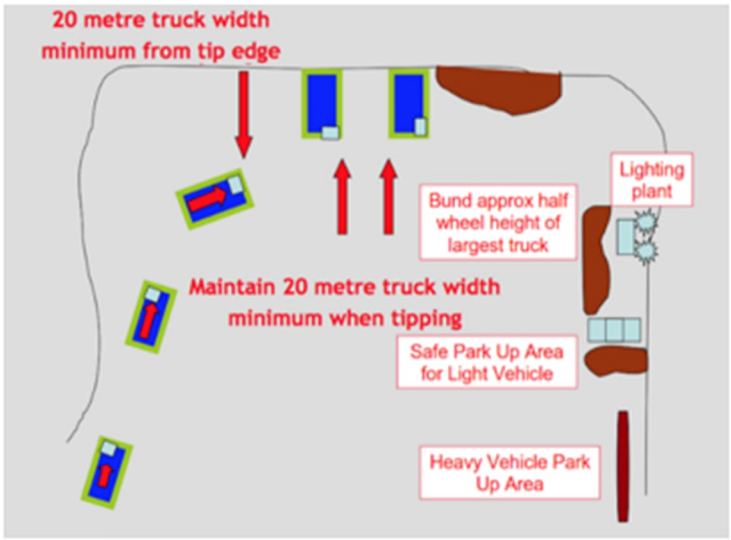

Figure 13: Typical workings on a dump

General Dump Requirements

i. Under normal dumping conditions the dump dozer operator provides direction to the truck operators on the dumping sequence.

ii. Truck operators are to tip so that loads are placed beside each other to ensure that there are NO gaps left at the tip face.

iii. Loaded electric drive trucks are not to be used on ramps that are ramping down greater than 3%.

iv. It is the responsibility of the truck operators to ensure that when dumping a load over a windrow that the body must be lowered sufficiently before moving away from the windrow to prevent the body from dragging the top out of the windrow. Operators are to ensure their truck bodies have been lowered completely before leaving the tip face.

v. At times truck operators will be requested to dump waste material in places indicated by the dozer operator or Supervisor. Trucks can spot to within 10m of a stationary dozer on the onside of the truck. Positive communication between

the dozer and the truck must be established if interaction is required within 10m when spotting. When a load is required to be spotted into position the dozer can use either of the following three methods:

- Spotting along the blade
- Spotting to a rip line

Communication on spot tipping requirements must be established between the dozer operator and truck operators.

Document Reference - MAC-PRD-STD-003

4.7 Pedestrian and Mobile Equipment Interaction – 10/3 Rule

4.7.1 10/3 Rule

The intention of the 10/3 rule is to provide separation during the interaction of pedestrians and mobile equipment (non heavy vehicles) when physical hard barriers are not achievable to segregate pedestrians and operating mobile equipment areas.

The 10/3 rule applies to all personnel and operational areas on site including the workshop, CHP and contractor workshop / laydown areas.

The 10/3 rule does not apply to

a) Pedestrians that are segregated by a physical hard barrier which is suitably designed and constructed to prevent the risk of a fatality to a pedestrian. The hard barrier must be clearly signed to prevent inadvertent access to the area.

b) Pedestrians and mobile equipment traveling on demarcated routes.

c) Light vehicles unless utilised for towing or vehicle recovery activities and only during the coupling/decoupling stage of the task.

d) Emergency response requirements

4.7.2 10/3 Zones around Mobile Equipment

Where physical hard barriers are not achievable, a minimum exclusion zone of 10 metres must be established so that all pedestrians not directly involved in a task are excluded while the equipment is operational and not immobilised. The perimeter must be clearly signed and visible from all possible access points.

Personnel involved in the task are only permitted in the 10 metre exclusion zone after a risk assessment to validate that there are no practicable options to exclude them from the operational work area or under specific 10/3 work procedure for the task. Personnel must never be within 3 metres of the equipment unless the equipment is immobilised or working under MAC-MEC-PRO-181 Using a forklift as tooling procedure.

The 10/3m zone around the equipment is defined around the body of the equipment and does not include the boom extents (e.g. franna crane) unless the equipment is travelling in pick and carry mode where the 10/3m zone is defined around the entire equipment envelope. Franna cranes have a modified 3m zone on the sides and rear of the body of the equipment when the hold brake is applied.

4.7.3 10/3 Controller

In circumstances where multiple work groups interact, and it is impractical to install hard barriers and/or separate the mobile equipment by physical separation a 10/3 controller maybe required. The key responsibility of the 10/3 controller is to maintain the required separation of pedestrians while mobile equipment is operating and communicate directly with the mobile equipment operator to stop and immobilise the equipment if the separation distance cannot be maintained. When utilising a 10/3 controller a job specific JHA must be completed and the requirements of MAC-STE-PRO-180 10/3 Controller must be followed.

4.7.4 Immobilised Mobile Equipment and Communication Protocols

Manned mobile equipment will be deemed immobilised when the park brake is applied. Franna cranes are considered partially immobilised when the hold brake is applied. Communication protocols to communicate equipment is immobilised include one or more of the following

1) Two way communication on a dedicated channel

2) Direct verbal communication

3) Hand signal communication (both hands up and open away from controls and steering wheel and then signal pedestrian to approach)

4) Dedicated park brake light external to the equipment.

4.7.5 Mobilising Mobile Equipment following a 10/3 interaction

After a 10/3 interaction has been completed and before the mobile equipment operator releases the park brake the operator must

1) Check that all pedestrians have left the relative 10/3m zone as applicable.

2) Conduct forward or reverse horn signals as per section 4.10.2

Document Reference - MAC-STE-MTP-027