



National Aluminium Company Limited

CODE OF PRACTICE FOR TIPPING ON  
STOCKPILES AND DUMPING OF  
OVERBURDEN BY TIPPERS/DUMPERS

## INTRODUCTION

This 'Code of Practice,' is applicable in Panchpatmali (North & Central Block) Bauxite Mine of NALCO. Operators/ employees/contractors of vehicles shall observe these rules and other special instructions given by the Mines Manager. The Mine' Manager and Officials appointed by him shall ensure that all persons in the mine comply with these Rules.

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### RULE # 1: RESPONSIBILITIES

#### 1.1 Mine Manager:

- The Manager is responsible for implementing matters covered by this Code of Practice. In particular the manager is responsible for ensuring:
  - 1.1.1 Written operating instructions are prepared, and available for reference and training.
  - 1.1.2 Operators are trained in the procedures.
  - 1.1.3 Operating instructions are strictly enforced.
  - 1.1.4 Stockpiles and dumps are properly sited.
  - 1.1.5 Stockpiles and dumps are in a stable condition.
  - 1.1.6 The employment of engagement of persons suitably qualified to ensure the requirements are met.
  
- Specifically, the manager or his representative will inspect all stockpile and dumps once a week and after long periods of continuous rain or after torrential downpours of rain. The Manager will ensure that at times of instability, during formation of the extraction from the stockpile or dump, there will be strict supervision of the operation.

#### 1.2 Assistant Manager:

- The Assistant manager shall see that the tipping/dumping operation are carried out in accordance with the code and he shall be responsible to given on the job training to the persons engaged in operations.
- The assistant manager shall inspect the latest once during every day.

#### 1.3 Foremen/Supervisors/Delegated Persons:

- The foremen/supervisors/delegated persons having operational responsibility ties associated with stockpiles and dumps shall oversee and apply those aspects of the Code that relate to their responsibility.
- Foreman/mate shall inspect the dump yard at least twice a day i.e., at the beginning of the shift and at the end of the shift apart from any emergency inspection like during/after heavy rains etc.

#### **1.4 Employees/Operators/Contractors:**

- Employees/Operators/Contractors are responsible to comply with this Code and the written operating instructions.
- They must immediately report unsafe conditions at the stockpile and of mobile equipment and highway delivery vehicles to the mine manager or foreman/supervisor.

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### **RULE # 2: OPERATING INSTRUCTIONS AND TRAINING**

- 2.1** At all mines where tipping or dumping is a part of normal operations, there will be prepared operating instructions. These instructions will detail the procedures to be carried out during the operations.
- 2.2** The manager is responsible for preparing the instructions and ensuring that they are applicable to the current operations.
- 2.3** The instructions will be displayed on a notice board and be available to all persons at the mine and be used for training and supervision purposes.
- 2.4** No operator will be engaged in tipping or dumping operations until they have received satisfactory training in the instructions and they have demonstrated, by practical tests, their competency in tipping and their knowledge of the instructions. It is the manager's responsibility to ensure this on-site training and testing has been performed.

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### **RULE # 3: SITING AND TYPES OF STOCKPILES AND DUMPS**

- 3.1** The siting and types of stockpiles and dumps is a responsibility of the manager and owner.
- 3.2 Ground conditions.** The ground should be selected using the following criteria:
- 3.3.1** The surrounding ground should be firm and stable and sufficient to hold the weight and resist the vibration of operating heavy mobile equipment, particularly if there is a nearby quarry face or water course;
  - 3.3.2** water courses, either natural or as a result of torrential downpour, should not be adjacent to the stockpile or adequate drainage should be provided at any stockpile or dump;
- 3.3** No stockpile or dump shall be formed directly beneath overhead power lines or on top of underground power lines:
- 3.3.1** Seven meters minimum horizontal distance shall apply from beneath power lines or top of any stockpile or dump;
  - 3.3.2** Access to stockpiles or dumps shall not be from beneath overhead power lines.
- 3.4** High stockpiles or dumps should not be located where high wind conditions may suddenly occur.

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## **RULE # 4: MOBILE EQUIPMENT AND VEHICLES, OPERATIONS AND OPERATOR TRAINING**

- 4.1** A check list, prepared by the manager, will be completed prior to start-up of equipment each day.
- 4.2** Specific items to be observed or installed are:
  - 4.2.1** **Rear vision:** Mirrors of sufficient size to simultaneously view tipping body and the contact between rear wheels and ground shall be fitted to each side of all rear dumps and tipping trucks.
  - 4.2.2** Dumps and tipping trucks operating between sunset and sunrise shall be fitted with a rear flood light of sufficient illumination capacity to provide clear vision of a distance not less than 10 metres.
  - 4.2.3** Audible or visual reversing alarms.
- 4.3** Any malfunction of the mobile equipment/vehicle must be immediately notified and if considered unsafe to operate, the equipment will be appropriately tagged "**Not to be used**", the malfunction is corrected.
- 4.4** All operators of mobile equipment/vehicle must be trained in the operations of the equipment. This training should include the, operating instruction at the mine.

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## **RULE # 5: FORMING THE STOCKPILE OR DUMP**

- 5.1 Access ramps:**
  - 5.1.1** Access must be sited to avoid possibility of impact with other mobile equipment and vehicles
  - 5.1.2** The ramp should, be constructed using a front-end loader or, tractor to compact the surface;
  - 5.1.3** The ramp angle should be such that it is compatible for the safe use of the appropriate mobile equipment;
  - 5.1.4** At edge there shall be constructed a berm.
- 5.2 Initial tipping or dumping:**
  - 5.2.1** The first, tipping or dumpings should be at a distance of 3 metre from the edge, if using an off-highway dumper. A front-end loader, bulldozer, or other similar mobile equipment pushes the product to the edge;
  - 5.2.2** The lead up to and the edge is compacted, but a berm is formed. This berm is 1 metre in width and 1.5 metre in height.
- 5.3** Non-operational areas will be designated by a berm of at least 3 metres in height.
- 5.4** Suitable lighting arrangement shall be made as soon as it is intended to extend working beyond daylight hours.
- 5.5** Unstable surfaces or edges shall be designated by flags, posts, signs or any other suitable materials and will be so located to warn operators, not, to operate mobile equipment or vehicles on these surfaces.

- 5.6 Proper arrangement for dust suppression shall be done in the dump yard.
- 5.7 Dump shall be maintained as level as possible with adequate drainage system to prevent accumulation of water over the dumps.
- 5.8 Dumping shall be done stage-wise and height of each stage shall not be more than 10 metres.
- 5.9 Loading and unloading operations in case of ROM shall not be carried out at that one place. For this purpose, *two stacks* shall be maintained. Before taking up loading operation of a stack, the entry to the stack shall be blocked so as to prevent entry of trucks

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## **RULE # 6: OPERATING PRACTICES OF TIPPER / DUMPER OPERATOR**

- 6.1 All overburden shall be dumped only in specified dump yard maintained for the purpose.
- 6.2 On entering a tipping area, the tipper operator should visually check the general area of the tip especially in their dumping area. All care must be taken regarding the positioning of the truck's rear wheels at the tipping face. A truck should not back up to an area which has not been visually inspected by the operator.
- Points to watch for are:
- Spillage
  - Soft Spots
  - Berm (height)
  - Undercutting or Cracking
- 6.3 When tipping commences in a new area, material should be dumped short of the tipping face and pushed up by a bulldozer to form a berm at the edge of the tip.
- 6.4 When dumping in an area where no berm is present (for example – the construction of a new haul road where material would be laid down in layers) material must be tipped short of any edge and then pushed into position by a bulldozer.
- 6.5 At the edge of the tip, a safety berm is to be left by the bulldozer operator. This berm shall be formed from the tipped material and have a height equivalent to the wheel diameter of the truck dumping. In any event, this berm should not be less than one metre in height.
- 6.6 When dumping in an area where berm is present, dumper should back squarely to the berm. Dumper operator while reversing the dumper for final dumping, shall not go at a speed more than 10 km per hour. The operator shall adjust the dumper in such a position that rear tyres of the dumper just touches the protection berm. The dumper operator shall not back up to an area which has not been visually inspected by him.
- 6.7 After positioning his equipment for tipping or dumping, the operator will raise the hoist with the equipment stationary. The hoist must be completely lowered after the operation of tipping or dumping. During these operations the operator will remain in the cabin.
- 6.8 If at any time the operator considers the operation unsafe, this should be immediately reported to the manager and/or foreman/supervisor.
- 6.9 Joint special inspections with supervisor shall be made after heavy or prolonged rain.

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**RULE # 7: IMPLEMENTATION**

Employees/operators/contractors/officials at dumps/stockpile shall be responsible to comply with the Code of Practices