Order of 29 rabie El Aouel 1425 corresponding to 19th May 2004 concerning transport and movement of persons and products in underground mines

The Minister for Energy and Mines

Given Presidential Decree No. 04-138 of 6 Rabie El Aouel 1425 corresponding to 26 April 2004 concerning nomination of members of the Government;

Given Executive Decree No. 96-214 dated 28 Moharram 1417 corresponding to 15 June 1996 fixing the responsibilities of the Minister of Energy and Mines;

Given Executive Decree No. 02-65 of 23 Dhou El Kaada 1422 corresponding to 6 February 2002 defining procedures for award of mining permits

Given Executive Decree 02-66 of 23 Dhou El Kaada 1422 corresponding to 6 February on procedure of award of mining permits following Request for Bids

Given Executive Decree No 02-468 dated 23 Chaouel 1423 corresponding to 24 December 2002 establishing the procedures for gathering, collection and/or harvesting

Given Executive Decree 02-470 0495 of 11 Safar 1425 corresponding to 1 April 2004 establishing the rules for professional mining standards, notably article 13

Orders:

Article 1: In application of the provisions of Executive Decree No. 04-95 dated 11 Safar 1425 corresponding to 1st April 2004, this Order fixes the conditions for transport and movement of persons and products in underground mines.

Article 2: For the conduct of mining activities, the holders of mining permits are bound to carry out works in conformity to the rules in this Order.

Transport and movement in wells

Article 3: Apart from during the preparatory period, no works may be performed in a mine without during the day, at least two communication channels in which personnel in the various work sites can move at all times.

The surface orifices for these communications must be separated by a distance of thirty (30) metres at least and must not be located in the same building.

Article 4: Orifices on the surface and inside wells and galleries with a dangerous slope and outlets from galleries in such structures must be protected by an effective fence, if there is no guard.

For galleries which do not have a dangerous slope, the orifices to the surface, if they are not in use or guarded, must, unless a concession is granted by the Mining Police Engineers, be sealed by a door which can be opened freely from the inside but can only be opened from the outside with a key.

Article 5: Orifices both on the surface and inside wells and galleries with dangerous slopes and outlets from galleries in such structures must, when they are in use, be equipped with barriers arranged to prevent any falling of people or equipment.

Article 6: In any well with guided cages, the receiving zones in service must be fitted with devices such as barriers which close automatically once the cage has left the receiving zone area. However, if work in the receiving zone is very reduced, automatic closing is not mandatory, provided the barriers can be padlocked and operated solely by an officially appointed Agent who will keep them closed and remain permanently on duty in the receiving zone throughout working hours. These arrangements apply to scales and underground goods lifts except for hooking scales.

Article 7: Personnel performing manoeuvring of barriers and wells, or in the immediate surrounds of a well of which the barriers are temporarily removed, must wear safety belts supplied by the operator.

Article 8: In wells which do not have a rigid guide system, any receiving zone, on the surface and at bottom must be equipped with a firmly fixed metal bar that can be used as a support during manoeuvres.

Article 9: All receiving zones including those on the surface if necessary, must be well lit with permanent lights, including if the work level is very reduced.

Article 10: Any receiving zone must be fitted with permanent devices for exchanging reciprocal signals with the well movement control station.

The Mining Police Engineers may exempt receiving zones from where there is a certainty of voice communication with the Control station or with another receiving zone which is guarded and itself fitted with such devices.

Instructions must specify the signalling rules, notably the signals should be exchanged for the various manoeuvres and the designation of persons authorised to issue them. The signals code must be permanently displayed in the various receiving zones and at the Operator’s Work Station.

The signals should avoid any confusion between signals concerning the various receiving zones and the different extraction compartments or with signals from any other source.

In the signals code, any signals of whatever nature and circumstances of use must have for both the sender and receiver, a unique significance which is always the same and clearly defined.

Article 11: A single blast of a hooter must always mean “stop”.

Article 12: Work signals should not be sent to the operator except by one single person in the receiving zone, unless there is a triggering signalling device assuring equivalent safety.

If a receiving zone incorporates several landings simultaneously in service, the receiver on a single landing is responsible for sending the signals.

Article 13: When signalling is electric, the same cable shall contain solely signalling wires for a single machine.

Any voltage failures must be made visible on operator’s Work Station.

Electrical installations must be checked at least once a year by a competent electrician who will record his comments in a register provided for this purpose.

Article 14: In all wells used for circulating of shifts, appliances should allow the exchanging of conversations between the operator and the receiver on the surface, located for the entrance and exit of personnel, unless agents can see each other and communicate directly by voice.

In any extraction area where more than 20 persons are working in the busiest shift located at more than 50 metres depth, normally used for extraction or circulation of the shift, must be equipped with appliances allowing the exchange of conversations with the surface.

Article 15: In any area occupying at least 100 persons during the busiest shift, telephones must be installed at appropriate points and a maximum of 1,000 metres from any worksite which is not used for preparatory or maintenance works. This distance is calculated according to normal access routes.

Article 16: The Agence Nationale de la Géologie et du Contrôle Minier may, if safety reasons require:

- reduce or increase the distances referred to above without, however, these being less than 500 metres;
- require various telephones to be manned, or placed at points where a call can certainly be heard;

- extend the measures in this paragraph to mines occupying fewer than 100 people during the busiest shift.

Article 17: For each well used for extraction, earth moving service and/or normal circulation of personnel, a detailed inspection must be performed at least once a week by a competent agent. The results of the inspection will be recorded in a special register.

Article 18: In wells with sinking appropriate measures will be adopted to prevent any falling stones; in particular the filling of cuffats must always stopped at least 20 cms. Below the edge; the walls and the base must be cleared of any adhesive materials.

Objects projecting beyond the edges of the cuffat will be attached to chains or a cable.

Article 19: In at least one communication channel with the surface, as specified in Article 2, ladders must be installed from the lower storey up to the surface, unless the personnel can leave by galleries or unless there are two communications with circulation devices with independent cables, constantly ready to operate.

Any well where normal circulation of personnel is by cable must be equipped with ladders or a second circulation appliance or an emergency cable appliance independent of the main one.

Article 20: In wells used for extraction or normal circulation of personnel which are equipped with a catchpool, ladders must be arranged from the lower receiving zone in service up to the bottom of the catchpool.

Article 21: The ladder compartment must be separated by a partition from the extraction compartment.

The Agence nationale de la géologie et du contrôle minier may exceptionally allow in wells with a small cross section, ladders to be placed in the extraction compartment provided that during circulation by ladders, no winding operation occurs.

Ladders placed in general air returns of mines subject to heating or the discharge of harmful or inflammable gas, must not be used for normal circulation of personnel.

Ladders and the separating partition provided for in Paragraph 1 must be inspected periodically and maintained in a good condition.

Article 22: Cages and platforms of skips used for normal circulation of personnel must be constructed to prevent personnel falling into the well and be protected against falling objects from outside. They must be equipped with support or suspension bars. They must be fitted out so that if they are immobilised accidentally, at any point, the operatives can be rescued.

Article 23: In wells exiting on the surface where cables are used for normal circulation of personnel, the guiding system above the upper receiving area must be adapted so that the cage or the skip which accidentally overshoots the receiving area is stopped by a gradual loading before it reaches the headgear.

In these wells, and in all wells with rigid guiding extraction, arrangements must be made to ensure that in the case of ascending to the headgear followed by rupture of the cable or its attachment, the cage or the skip does not fall back into the well.

In wells used for normal circulation of personnel without a tail pin or if the tail pin has been removed, the water level must be sufficiently low in the catchpool to exclude any risk of drowning of personnel.

In wells where there is a catchpool and if cables are used for circulation of the shift without a tail pin or if the tail pin is removed, the guide system must be arranged such that a cage or skip overshooting the lower receiving area is stopped by gradual loading before reaching the bottom.

Article 24: In a case of circulation using ladders, it is prohibited to carry tools and heavy objects except for a lamp. Tools and objects must be fixed to the body or carried in a bag firmly affixed to the shoulders.

If ladders are out of use, arrangements must be adopted to ensure no person will use them except to repair them.

Article 25: Permanently displayed instructions at the edges of the well must lay down the conditions for all normal circulation of personnel, notably:

- the measures personnel should adopt to maintain safety and good order,
- the number of persons who can be transported in the same winding,
- the conditions for circulation of newly recruited agents,
- the start and end times of shifts.
- If normal circulation occurs using a single cable, this must be stated in the Instructions.

Article 26: Instructions permanently displayed in view of the Operator sets out the maximum translation speed for personnel and if appropriate, the slowing points.

In wells where machines are equipped with the devices provided for in Articles 35 and 37 of the order on mining machines, the maximum speed shall not exceed 12 metres per second , nor for extraction wells, unless there is a concession by the Agence nationale de la géologie et du contrôle minier, three quarters of the speed of products.

In the absence of the devices referred to above, or if these are not in operation, the translation of personnel shall be performed at a reduced speed as required by installation conditions, without ever exceeding 6 metres or 2 metres per second depending whether the machine is, or is not, equipped with the above-mentioned devices.

Article 27: Special signals to be defined in the Instruction in Article 5, must be made for all translation movements of personnel. These may be emitted solely at the start and end of a group of windings to the personnel,, provided an optical signal remains in view of the operator during this group of windings.

In the case of wells used for normal circulation of personnel, the entry of personnel into the cage or the exit of personnel from the cage, in any receiving area whatsoever, must be subject to prior acceptance of a permissive signal from the Operator. This signal must not be capable of being issued until the machine brake has been put on.

When a cage is stopped at a receiving area to pick up or deposit personnel, its movement is subject to receipt of a signal sent from the receiving area, even if it is not manned; in the latter case, the instruction in Article 5 (sub-paragraph 3) must specify the waiting time to be observed by the Operator following receipt of a signal.

Article 28: The tail pin on the base hook must remain eliminated when there is no automatic device limiting the speed of arrival of the cage at the attachment point to 1.5 metres per second, or if this device is out of order.

Concessions to this instruction may be granted by the Agence nationale de la géologie et du contrôle minier.

The tail pins for intermediary stages must be maintained effective, except to receive a rising cage.

Article 29: In each receiving area the entrance and exit of the shift occurs under the surveillance of a member of personnel specially designated for this person. The personnel must comply with his instructions.

In internal receiving areas, a chain or other equivalent device must be placed at belt height at least two metres from the edge of the well. Personnel must not pass beyond it until it is their turn to enter the cage.

Article 30: The same storey of the cage shall not contain heavy equipment or wagons at the same time as personnel.

If personnel are lifted by one of the cables or a strand, the other cable or the other strand shall not be used to transport loaded wagons or heavy materials.

During circulation of the shift by one of the cables or strands, the other cable or strand shall not be used except to transport persons, tools or empty wagons.

Article 31: During circulation of the shift, receivers in the receiving areas shall not leave the area for whatever reason.

During any circulation of personnel, the lift machine Operator must be permanently at the Work Station and capable at any time of activating the travel reversing lever, the regulator or the brake. At least one of the brakes must remain on while the cage is in the receiving area.

The Operator must never leave the operating work station without first putting on all the brakes.

Unless automatic devices prevent the cage from descending and reaching the bottom at a speed in excess of 1.5 metres per second and a rising cage from reaching the headgear, the Operator must be assisted by an assistant operator during circulation of the shift; an assistant operator must always be able to intervene instantaneously.

Article 32: In sites where personnel normally access the bottom using cables, arrangements must be made to ensure that in the case of need, personnel working at the bottom can, at any time be rapidly brought to the surface.

Article 33: Any person circulating by cuffat must remain at the bottom of the cuffat, unless they are linked by cable or by suspension device or by safety belts provided by the Operator. The safety belt is mandatory if the cuffat is less than one metre deep.

The necessary arrangements must be adopted on the surface and inside internal receiving areas to prevent any accidental movement of the cuffat as personnel enter or leave it.

Except for wells with sinking the cuffats normally used for circulation of personnel must be equipped with an effective protective cover.

Transport and circulation in inclined planes and galleries.

Article 34: The devices for coupling vehicles must allow attaching without introducing the body between the wagons unless the projection of buffers allows this to be performed without danger.

Each time when for attaching or detaching operations, personnel must insert an arm between the vehicles, the latter must be equipped with buffers of which the projection guarantees in straight alignment, a free space at least 20 cm between the box wagons. In the case of impossibility, temporary concessions may be granted by the Agence nationale de la géologie et du contrôle minier.

The towing hooks must be arranged so they cannot become detached during operation.

Article 35: The operator of a winch must not move away without cutting off the power supply to the motor and checking that the brake is on.

Arrangements must be made to protect the winch Operator, when in his control position from injury either by the wagons he is manoeuvring or the moving cables

Article 36: Access to any sloping zone and in service must be barred such that personnel cannot accidentally enter it.

The receiving areas are arranged so that the wagons cannot be moved except deliberately.

For all receiving areas on the same plane with carrier trucks, a device must, in its normal position, prevent accidental access of vehicles to the plane; it should only be removed if the truck is satisfactorily positioned in the receiving area.

In upper or intermediary receiving areas on other planes, a device must prevent the deviation of wagons before they are attached to the cable. This must not be removed until the wagons have been attached to the cable and after checking their attachments.

If this device is not sufficient to prevent accidental penetration of wagons into the plane, a second device must be fitted.

No agent shall work, even exceptionally, in an inclined plane or a rising wall or dipheading without all arrangements being made to prevent the running away of wagons located upstream.

Article 37: It is prohibited to remain in an inclined plane or at the base of the latter during circulation of wagons; special shelters will be fitted as necessary for personnel in the receiving areas.

Personnel circulating or working at the base of inclined planes must be protected against runaway wagons.

In sinking dipheadings or in inclined planes with terracing, arrangements must be made to stop runaway wagons.

Article 38: Self-driven pulleys in inclined planes must be equipped a brake with a counter weight which is normally on; shimming of this device in the off position is prohibited.

The pulleys for flywheel brakes and other braking devices attached to a support must be linked to a second support by an independent emergency attachment.

Article 39: Unless communication by voice avoids any uncertainty, any inclined plane must be equipped with reciprocal communications between the various receiving areas and the machine operator.

The signal code fixed by instructions must be permanently displayed and visible in each receiving area and at the Operator Work Station.

A single blast of a hooter must mandatorily indicate “stop”.

Article 40: In inclined planes used by vehicles, circulation is governed by appropriate instructions issued by the Agence nationale de la géologie et du contrôle minier.

The instructions will also lay down the conditions for crossing the planes.

The circulation by wagons or trucks on inclined planes or dipheadings is prohibited unless authorisation is issued by the Agence nationale de la géologie et du contrôle minier laying down the conditions for such circulation. This ban does not apply to the transport of sick or wounded personnel.

Article 41: When a wagon is derailed or accidentally stopped, the Operator must be warned. During operations for restoring order, no person shall be downstream of a wagon before it has been secured using an effective device and under the responsibility of upstream receiver. It shall not be moved until all personnel employed for lifting and removal are safe.

Article 42: Tracks inclined more than 25 degrees with normal circulation of personnel must, unless they are carved into stairs or equipped with ladders, be equipped with a cable or a bar used as a ramp.

If the incline exceeds 45 degrees these routes must mandatorily be carved into stairs or fitted with ladders. No repair work shall be performed except on planks or with a safety belt supplied by the Operator.

Article 43: In galleries where traction is mechanical and which are not wide enough for safe parking on the sides, refuges which can accommodate two people must be provided in the walls at intervals not exceeding 50 metres; these refuges must be dug perpendicular to the track and must be kept clear and measure at least l metre in depth, 2 metres in height and l.5 metres width. .

Characteristics of underground mobile equipment.

Article 44: The Operator will install and maintain on mobile equipment:

- a service brake capable of stopping and retaining the vehicle with maximum load on the slopes where it travels;
- a parking brake which is not engaged and kept engaged solely by mechanical means, capable of retaining the vehicle with maximum load on the slopes where it travels;
- an indicator light warning the driver of any reduction in pressure if pressure brakes are used;
- a device to allow the driver to verify each braking system independently;
- a audible warning signal;
- headlights illuminating the direction of travel indicating, if possible, the width of the vehicle in the direction of travel, with a red light at the rear of the vehicle, except in the case of vehicles designed to travel in two directions;
- a retaining device intended to prevent any damage to the vehicle control systems in the case of a defect in the transmission shaft or sleeves;
- a switch to cut off the current conditions so require;
- an audible warning signal which is triggered if the vehicle reverses, unless, if, depending on the situation, other warning devices or protective devices are used, or if the mobile equipment is designed to be operated in both directions and if the Operator can see in both directions;
- a switch cutting off the electrical current from the battery;
- if a vehicle is activated using a remote control, or an automatic control system, a device which immediately activates the brake in case of defect in such remote control device or system.
- Concessions may be issued by Agence nationale de la géologie et du contrôle minier, for certain items of equipment if safety is not called into question.

Article 45: No persons shall ride as a passenger on a vehicle at the bottom of the mine unless a seat is provided. .

Article 46: Except for vehicles on rails, transport of personnel on the bottom of the mine on moving vehicles is not authorised unless:

- the vehicle is equipped with a roll bar in case it tips over
- the vehicle is equipped with a safety belt for the driver of the vehicle and for each passenger;
- a cage covers the passenger compartment to prevent the latter hitting the side walls or objects hitting them in the case of sudden movements;
- the driving force is at the front, in the direction of travel.

Article 47: Entering or leaving a vehicle when it is moving is prohibited.

Article 48: Any vehicle operating in a zone where stability of the ground represents a danger for the Operator, must be equipped with a roof which protects the Operator from any projections under which it passes and from rock falls from upper levels. The roofs must be designed so as to withstand the force of falling objects falling from upper levels.

Article 49: In galleries where mechanical traction on rails is used, the Operator will maintain depending on the case:

- a full space of at least 450 mm between the side walls of the track and the vehicle;
- free space of 600 mm on one side of the vehicle.

Article 50: On underground tracks where mobile equipment is used, the employer must maintain:

- a free space of 1.5 m minimum between the side walls of the work area and the mobile equipment;
- a free space of at least 300 m above vehicles equipped with a covered cab;
- a free space of 1.2 m above the driver’s seat on vehicles not equipped with a covered cab;

Article 51: At points where the extent of manoeuvres so justifies, travel galleries must be equipped with adequate fixed lighting.

Article 52: At points where personnel normally carry out attachment or detachment of vehicles, one side must have adequate free space to perform this without danger.

Article 53: In galleries where movement effected by dragging by chain or cable, the personnel shall not circulate during such movements unless there is a minimum passage of 60 cms width at least on each side, and all points a means of signalling to communicate with the Operator or a remote control to stop the motor.

Concessions to this paragraph may be granted by the Agence nationale de la géologie et du contrôle minier for the circulation of isolated personnel.

Signals defined by instructions permanently displayed in the dragging control station and each of the power supply and release stations.

A single blast on a hooter must imperatively mean “stop”.

Article 54: Personnel travelling or working at the base of corridors with a steep slope or chimneys must be protected against falling objects.

Article 55: Measures must be adopted to ensure that parked wagons in galleries do not accidentally set off and wagons in motion do not attain dangerous speeds.

Article 56: Pushing wagons to modify the speed or leaving them on their own on sloping tracks, except at convoy formation points is prohibited. Approaches to these points must be announced with a clearly visible signal.

In low galleries the wagon handlers must operate wagons using the assistance of devices protecting their hands against injury.

Wagons in the same convoy must be firmly attached to each other.

Manual pushing is prohibited except by a concession granted by the Agence Nationale de la Géologie et du Contrôle Minier.

***Article 57*:** Manually lifting a derailed wagon back onto the rails is prohibited unless the locomotive has been detached or the chain or cable detached. If it is desired to use a device to restore the wagon to the rails which is not installed at a fixed work station or a device which prevents accidental movement of a derailed wagon, it is necessary to obtain the prior agreement of the driver or operator before this is done.

***Article 58*:** All convoys must be equipped at the front with a white light and at the rear with a red light. The Mining Chief Engineer may authorise replacement of the red light by an appropriate catadioptric. Except on tracks with fixed lighting, locomotives must carry headlights lighting up the track for a distance at least equal to the stopping distance of the convoy.

Article 59: Circulation of trains or mechanically propelled vehicles is governed by instructions brought to the attention of the Agence Nationale de la Géologie et du Contrôle Minier and define notably, the essential guarantees of the installation and equipment.

These instructions also lay down the conditions for walking in the same galleries.

Article 60: Transport of personnel by isolated trains or vehicles must be the subject of instructions approved by the Agence Nationale de la Géologie et du Contrôle Minier.

Except in these cases, riding on wagons is prohibited. However, the instructions of the Operator will lay down the conditions for the transport of injured personnel, personnel in trains and surveillance agents.

Article 61: This Order will be published in the Official Journal of the Democratic and Popular Republic of Algeria.

Issued in Algiers, le 29 Rabie-El- Aouel 1425 corresponding to 19th May 2004.

M. Chakib KHELLIL.