

## Health and Safety at Work in The Romanian Mining Industry Present and Future

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**ABSTRACT:** The mining activity implies a certain degree of familiarity with the underground environment, and the risk factors determined shall play their part on condition they become known before reaching a certain degree and stage of development. Accordingly the basic concept for the new legislation in the field of labour protection in Romania starts from the idea the risk prevention and health and safety assurance should be a constant concern of all the person involved in the working process. The paper present a short review of some aspects related to the current situation of occupational diseases and accidents in the Romanian mining industry. Based on this analysis, there are also shown the problems the National Institute for Mine Safety and Protection Proof Explosion - INSEMEX Petroşani is involved in. as well the results in the activity developed to assure good safety and health condition.s in the Romanian mines, viewing the harmonisation of the Romanian legislation with the legislation in the European Union.

### I HEALTH AND SAFETY INDICES OF THE MINING SECTOR BETWEEN 2000-2002

For the above-mentioned period, both the mining and geological sectors faced a lot of occupational accidents, diseases hazardous incidents and events with human victims and important damages.

The values of labour accidents recorded in the mining activity, divided for each sector of the extractive industry and compared to those values of the whole industry in Romania show a strong increase; the main reason of this situation is an inadequate health and safety policy led by the managing teams.

The analyses carried out in each company or society in the mining sector show a low safety level at the working places with a diminished efficiency of the decisions taken for the development of an adequate working climate.

The diagrams 1 and 2 show the situation with the

accidents in the mining sector for the above-mentioned period and their weight in the total number of accidents recorded in the whole economy.

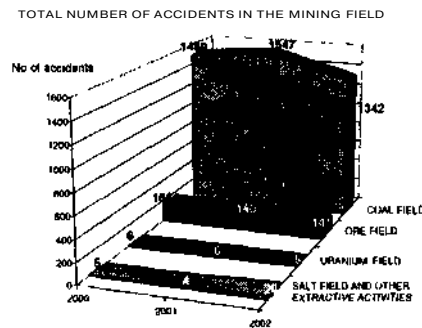


Figure 1

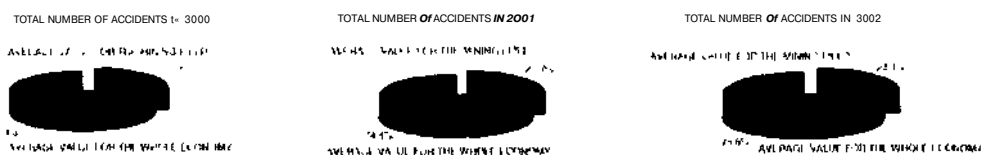


Figure 2

The weight of lethal accidents related to the total number of accidents produced in the same period for

the main extractive sectors in Romania is shown in the diagram no 3

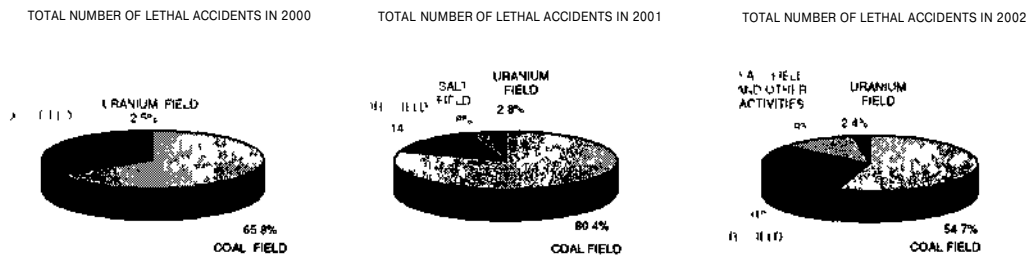


Figure 3

As for the indices of operation that define the activity of labour protection (index of frequency, index of seriousness and index of average period), the diagrams 4,5 and 6 make a comparison between the situation in the mining sector and the one in the whole economy

The weight of occupational diseases in the mining sector out of the total value recorded on the economy with the main types of occupational diseases are all shown in fig 7 and the material damages due to accidents and occupational diseases are shown in Figure 8

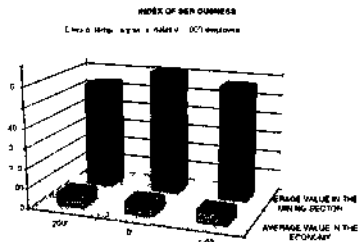


Figure 4

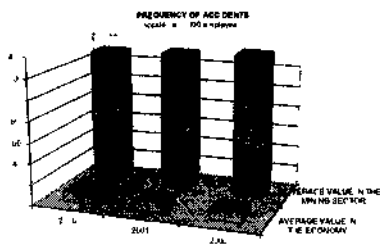


Figure 5

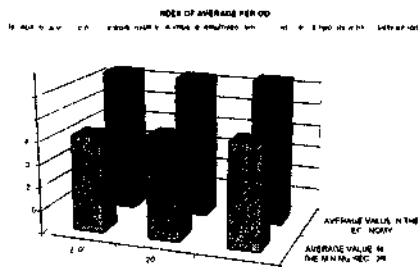


Figure 6

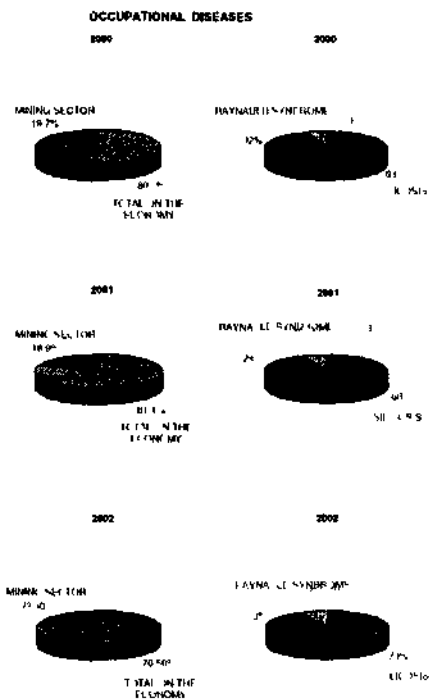


Figure 7

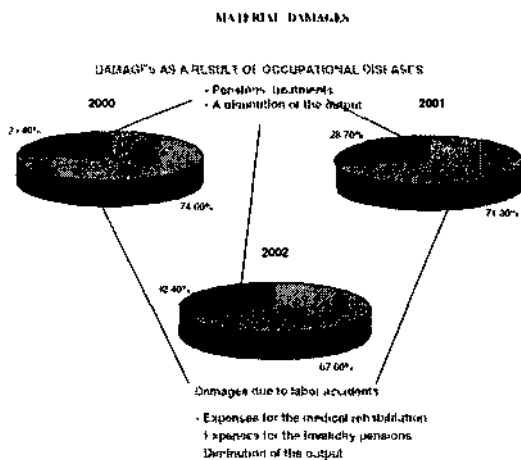


Figure 8

The labour accidents and occupational diseases had originally the following causes:

a) Use inadequate technical equipment:

- the use of some working gear that hasn't been previously certified or verified accordingly, with a low degree of safety during the operation periods;
- the implementation of old technologies with a high risk degree on of some non-authorized and non-certified procedures;
- a lack or an inadequate operation of measuring and survey devices in those places who need regular check-up all through the working process ;

b) A faulty organisation of the working flow and of the staff training at the working places:

- the rules for health and safety at work are not implemented in the production process and on each working stage;
- the measures for a preventive safeness are implemented sporadically;
- the occurrence of a less strict working climate as the authority of the managing staff has diminished
- a faulty organisation of the working stages
- the lack of a less rigorous system for the selection, training and use of the personnel depending on their professional skills;
- a lack of balance between punishments and rewarding measures for all those persons involved in the safety and health at work;
- a lack of an adequate professional training;
- a lack of detailed training system, with a practice implementation so as the working personnel should get the skill, experience and awareness necessary to work in a safe manner;

- gaps in the supply with materials, working gears and protective equipments.

c) The responsibilities are not clearly defined for each person and the part played by each participant in the working process and by each expert organisation structure are not clearly specified with respect to the safety of working places.

## 2 INCREMENT OF HEALTH AND SAFETY IN THE MINING SECTOR

The registration and the strategic program with respect to some special initiatives necessary in the mining filed are a stringent necessity considering the present situation in this sector that can be characterised by specific risks of occupational accidents and diseases, difficult working conditions and problems in the training of the personnel; also, there are problems in a safe limitation of the working areas, in the system used for survey and warning in the working environment.

The mam aims for the both the near and the distant future are the following ones :

- the development of a complex training system, divided into professional categories;
- the implementation of survey, support and protection systems suitable for mine beds and based on well - documented studies from the point of view of labour safety;
- improvement of the means and methods used to determine the environment safety parameters and the purchase of modern apparatus suitable for this purpose;
- improvement of the present system with respect to the organisation of the preventive medical assistance.

One of the main requirements in a market economy is a high professional training of the labour force, i.e. it is necessary :

- a suitable recruitment, selection and employment of the labour force;
- the development of a suitable organisation and motivational framework with a clear underline of the rights and of the commitments of each worker in the working process;
- a suitable training and specialisation of the labour force;
- a suitable health and safety protection and a social protection of all the employees.

All these clauses are included in a health and safety program orientated especially towards a suitable supply of health and safety at work and towards a good social protection of the labour force. This program is necessary both due to economic reasons and due to the implementation of the Law for the assurance against labour accidents and occupational diseases currently in force.

The main aim of this program is to eliminate or to diminish as much as possible the unhealthy and unsafe working conditions and the hazardous operations that might produce accidents and occupational diseases.

The program includes two basic elements that refer to:

- A) The prevention of all types of accidents and of occupational diseases;
- B) The rehabilitation of the injured persons and of those persons recorded with occupational diseases.

The prevention bases on the development and implementation of a complete and permanent system for the promotion of information and training of the working personnel and of the managing team.

The assessment of occupational risks shall have a permanent character within the working units, with the consideration that both the conditions at the working place and the working conditions may change in time. Also, an assessment of risks aims to make the workers think, understand and recognise dangers and take all the necessary correction measures, fully aware of everything.

The program for the rehabilitation of the injured people or of the persons affected by occupational diseases aims to settle all the problems and concerns of those who suffered an accident or suffer an occupational diseases for the purpose of their social and economic re-integration.

The medical, professional and social rehabilitation is made based on framework agreements signed with medical units, for special rehabilitation, agencies for the training of the labour force.

### 3 PART PLAYED BY INSEMEX PETROȘANI AND THE PROBLEMS APPROACHED IN THE FIELD OF HEALTH AND SAFETY AT WORK

The industrial practice has shown that all the activities and especially mining are accompanied by risks that may give birth to several technical problems and further on, to labor accidents and / or occupational diseases. As the damage and human deaths cannot be accepted, no society allows to let free the development of such unfortunate technical problems.

To keep risks under the acceptable limit it is necessary to devise a set of measurements with the purpose of prevention and imposed by the rules settled in a society; to this end the scientific research can play an important part.

Accordingly, the National Institute for Mine Safety and Explosion - proof Protection - INSEMEX Petoșani - has been nominated as a state authority in the following fields of activity;

- a) verification, approval and certification of the documentation equipments, electric-installations, materials and of home-made or imported apparatus that are to be used in potentially explosive atmospheres and the certification of economic agents involved in the manufacturing and marketing of these products;
- b) certification of the personnel involved in designing, mounting, maintenance and repairing operations carried out in industrial areas classified as hazardous from the point of view of the probability of occurrence of explosive atmospheres;
- c) verification and approval of explosive materials and of means of irritation as well of blasting technologies;
- d) training and certification of the personnel that operates in explosive and / or toxic environments;
- e) classification / re-classification of mines from the point of view of their emissions of toxic and / or explosive gases.

As it is the only research institute in Romania that makes approaches of health and safety aspects in mining, there has been recorded an ever diversified implication all through the years. Now, based on the results, it can better support the development of the above - mentioned Program for health and safety.

Among the latest study aspects that are finalised now or are being developed, the following ones may be cited;

- ✓ development of a Health and Safety Manual for lignite mining in Romania that meets the requirements stipulated in the Framework Directive no. 92/104/EEC. In the near future, a same type of manual shall be developed for the hard coal mines;
- > after an analysis of the labour risks in the mining activity, it has been considered as necessary to determine the most decisive factors that help an improvement of the working conditions and support the implementation of the programs for health and safety; accordingly, there has been produced a method that can be used assess risks at the working places. It based on a safety policy that aims its management for the personnel employed by the mining units;
- > the technical part in ATEX Directive has been included in the Law for Labour Protection no 90/1996, including the part related to the harmonised with the European standards (CEN/CENELEC). Of this series of standards, the main standards for the protection to explosion have been transposed into the Romanian standards at the initiative of the Romanian Technical Committee 137 and of INSEMEX.

the department of certification, recognised by the Ministry of Labour and Social Protection is the most well equipped in Romania ; it has special installation for tests to explosions and it is in process accreditation by Physikalish-Technische Bundesanstalt in Braunschweig; the development of a large program for the survey of health and safety parameters specific to hard coal mines located in the Jiu Valley. The final results shall support the development of framework mining programs;

implementation of new technologies used to prevent and fight against endogenous fires in coal mines; these technologies help to diminish the output losses and make all the coal deposits safer;

a co-operation with the specialists in the Ministry of Industry and Commerce and with counsellors of the World Bank for the development of a Manual for Mines Closure; this document ca offer a legal framework for the re-organisation of the extractive industry in Romania, process that started in 1998.

