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Politechnika Śląska w Gliwicach

Polska Grupa Górnicza S.A. w Katowicach

Dyscyplina naukowa: Inżynieria mechaniczna

Promotor: dr hab. Inż. Grzegorz Moskal – prof. PŚ

Opiekun Pomocniczy: dr Leszek Doległo

Autor: mgr inż. Tomasz Malurdy

SUMMARY OF THE DOCTORAL THESIS entitled:

„QUALITY CONTROL OF MATERIAL SUPPLY USED IN THE OPERATION OF UNDERGROUND MINING PLANTS”

The literature on the subject in the area of broadly understood quality rightly emphasizes the impact of conformity assessment systems, among others, on occupational health and safety. The process of ensuring the safety of materials and products used in mining plants is one of the important elements shaping occupational health and safety.

in mining, which is the responsibility of government administration bodies, market surveillance authorities, entrepreneurs, research institutes and users. In this work, an attempt was made to deal with the encountered issues, the complexity of which constitutes a formal and managerial challenge, and their explanation becomes necessary. Among other things, the problem related to the ambiguous interpretation of regulations by manufacturers, their authorized representatives or suppliers was identified and described, which additionally motivated the clarification of formal rules for quality control of supplied materials and products.

As part of the work carried out, an analysis of the legal requirements regarding the quality control process of materials, machines and devices used in underground mine workings was carried out, as well as a characterization of the organizational and technical solutions used in Polska Grupa Górnicza S.A. in quality control processes of materials and products. Assessment

criteria were also developed and areas requiring corrections were identified in terms of verification and modification of procedures and technical aspects of supply quality control processes.

The cases and circumstances described in this work indicate the need to place emphasis on a better flow of information in the field of quality control, which includes both the competences of controllers and the adequacy of the metrological methods used and their implementation on certified equipment, as well as a clear procedural description of the quality control processes conducted upon the entry of material or goods through the "Warehouse" to the User. Identified deficiencies and irregularities in the applicable internal regulations, fully justify the need to create appropriate solutions that will secure the important interests of the "Ordering Party" in the quality of materials and products used in the operation of underground mining plants.

During the inspections and tests, some were introduced on an ongoing basis from remedial actions that are in practice implementation elements, such as the use of a transverse bar "check" in the case of mesh cladding. Preventive activities were also carried out to educate employees in the area of application of internal regulations, control and metrological methods used, as well as control and measurement tools. These activities brought tangible results, e.g. in the area of wood supplies. The number of irregularities decreased by over 45% over a three-month period. Appropriate provisions in internal regulations, enabling the verification of quality features required by contractual provisions, require the preparation of an appropriate field of action, consisting in detecting and indicating irregularities and possibilities of their improvement, as well as systematizing and standardizing the activities undertaken by employees in individual warehouses of the Company's mines..

Research and analysis of data collected in the course of the work allowed for the proposal to implement a number of remedial actions which, in the author's opinion, will expand knowledge in the area of quality control, both among employees directly verifying it, but also among people responsible for the broadly understood purchasing process, which as a consequence, it will be reflected in the quality of the delivered materials and products, and thus reduce the risk of loss in the event of an attempt to deliver poor quality goods. The Integrated Management System implemented and used in the Company allows for the adaptation of existing internal regulations in order to optimize the quality control of material

supplies. The solutions proposed by the author can be implemented in stages, and each stage can be implemented in a "pilot" form in one of the coal mines, in order to validate it and introduce possible changes and corrections.

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Tomasz Malurdy