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International Workshop on Harmonization
of National Regulations, Standards and
Procedures for Certification of Equipment
and Materials used in the Mining Industry
Szczyrk (Poland), 15-17 October 1998

REPORT

I. WORKSHOP ORGANIZERS AND PURPOSE

1. The Workshop was organized by the Central Mining Institute of Poland in cooperation with the European Commission Energy Centre Katowice under the auspices of the United Nations Economic Commission for Europe.
2. The main purposes of the Workshop were to exchange information on national legislation, standards and procedures for conformity assessment of mining equipment and materials in Europe and other parts of the world; to examine to what extent and how the national systems in east European and CIS countries can be readily aligned with the existing regional schemes in Europe and global schemes; to identify main barriers and difficulties with respect to harmonization and solutions for overcoming them; and to make recommendations for further activities, which would assist the interested east European and CIS countries in harmonizing their conformity assessment practices with European regional and worldwide systems.

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II. OFFICERS AND ATTENDANCE

3. Mr. Adam Graczynski, General Director, Central Mining Institute, was the President of the Workshop. Mr. Jozef Dubinski, Deputy General Director, Central Mining Institute, and Mr. Pawel Krzystolik, Director, Experimental Mine "Barbara" of the Central Mining Institute, served as Vice-Chairmen.

4. The Workshop was attended by experts from the following ECE member countries: Albania, Bulgaria, Estonia, Germany, Poland, Romania, Russian Federation, Slovenia, Ukraine and United Kingdom. A representative of the EC Energy Centre Katowice was also in attendance. The following international organizations were represented: International Electrotechnical Commission (IEC) and International Organization for Standardization (ISO/TC 82 Mining).

III. PROGRAMME

5. The programme comprised four working sessions and technical visits to the laboratories of the Central Mining Institute and the Experimental Mine "Barbara", which are accredited certification bodies in Poland

IV. OPENING SESSION

6. The Workshop was opened by Mr. A. Graczynski, General Director, Central Mining Institute, Poland, who welcomed the participants and wished them a fruitful meeting and pleasant stay in Szczyrk. He stressed the importance of harmonization of standards and certification procedures of mining equipment in Europe as a condition for free international trade. Since Poland is a first-line candidate for membership in the European Union, it is necessary to implement rapidly the EU standards and directives. The Central Mining Institute has already carried out, in cooperation with the other competent institutions, a significant part of the activities towards EU-conformity and is preparing to become an accredited body for conformity assessment of mining equipment according to the EU directives. Mr. Graczynski expressed the readiness of his Institute to share the knowledge and experience gained with harmonization in the field of certification with interested countries in eastern Europe and the CIS. The International Workshop had been initiated by Poland with this aim in mind and to establish closer cooperation throughout Europe among the bodies involved in this specific target.

7. Mr. R. Starosielec, Vice-President, State Mining Authority, Poland, welcomed the participants and informed them of the responsibilities and role of the State Mining Authority in the certification and harmonization issues of mining equipment. As the highest body for mining supervision and inspection, it has the principal responsibility of ensuring safety, health and environment protection in the mining industry. The State Mining Authority also takes an

active part in the work of the European standardization organizations and coordinates the activities undertaken in Poland for harmonization and integration with the EU in connection with conformity assessment for mining equipment. Mr. Starosielec stressed the need for regular exchange of experiences and close international cooperation among the institutions responsible for ensuring occupation safety and health and environmental protection in the European mining industry.

8. On behalf of the ECE Executive Secretary, Mrs. J. Andorfer, Economic Affairs Officer, Energy Division, expressed appreciation to the Government and sponsor organizations of Poland as well as to the EC Energy Centre Katowice for hosting this International Workshop under the auspices of the ECE Committee of Sustainable Energy. She outlined the work programme of the Committee and its competence as a forum for elaborating solutions to common concerns, harmonizing policies and practices and promoting sustainable development in the production and use of energy in the ECE region. Given the growing economic integration in Europe as well as the progressing liberalization and globalization in the energy sector, ECE is ready to lend its services for facilitating the integration of member countries in these developments.

V. WORKING SESSIONS

Session I

Chairman: J. Dubinski (Poland); Vice-Chairman: Yu Shein (Russian Federation)

9. The following presentations were made and discussed: W. Henrykowski, Polish Centre for Testing and Certification, Poland: Basic issues of harmonization of the Polish regulations with the European Union legislation in the process of accreditation and certification; I. Cleare, International Electrotechnical Commission (IEC) and Electrical Equipment Certification Service, United Kingdom: Development of a worldwide certification scheme for explosion protected equipment; A. Oslawska, G. Pazdziorek and M. Zapart, State Mining Authority, Poland: Assessment of mining machines and mining equipment in aspects of safety requirements in technical regulations and norms - nowadays and in the future.

Main conclusions:

10. The topic of harmonization of national regulations, standards and procedures for certification of equipment and materials used in the mining industry is of interest and concern to most European countries. In most west and east European countries, the reference level for harmonization is the regulations of the European Union. For various reasons but depending primarily on the degree of association and cooperation with the EU, the pace

of the harmonization process is different among the countries in Europe. In the countries which are first-line candidates for EU membership, harmonization is supported and coordinated by governmental institutions. This is making the process easier and is speeding it up.

11. The session provided a good overview of the present regulations and procedures for conformity assessment in Poland and the measures which Poland is taking to harmonize the national regulations with the EU legislation and requirements. Since Poland is a first-line candidate for EU membership, alignment with the EU regulations and standards for conformity assessment is a necessity, among other reasons, to permit the free flow of goods within the EU common market. It is of paramount importance for Polish manufacturers, who export their products to this market. Furthermore, as a result of the access of Poland to the World Trade Organization (WTO) and thus to the WTO Agreement on Technical Barriers to Trade (WTO/TBT), there is a need to remove non-tariff trade barriers and this constitutes a strong incentive for Poland, like for other WTO Members, for international harmonization of norms, regulations and procedures for conformity assessment.

12. The steps that need to be taken by Poland for the gradual harmonization of the Polish conformity assessment system with that of the EU are stipulated in the protocol regarding the European Agreement concerning Conformity Assessment, which has been ratified by the EU and the Government of Poland. The process encompasses many activities. A future Polish conformity assessment system fully in compliance with the EU system should regulate the principles of the functioning of the voluntary and obligatory certification. An essential part of this system will be the accreditation of EU-recognized measurement, inspection, testing and certification laboratories and their notification to the European Commission.

13. For the obligatory certification, the most important steps are the introduction of the relevant EU directives into Polish legislation and the application of harmonized EU type "A" and "B" standards for equipment and materials used in underground mines. Analysis needs to be carried out to determine the methods of taking over the EU requirements and standards. In this context, it was explained that for products and services requiring obligatory certification, in the EU member countries according to the New Approach introduced in 1989, directives set out the essential requirements for protection of life, health and the environment, and the methods of demonstrating product conformity. The basis for conformity assessment with the requirements of the directives are the harmonized EU standards elaborated and adopted by the European standardization organizations CEN (European Standardization Committee), CENELEC (European Committee for Electrotechnical Standardization) and ETSI (European Telecommunications Standardization Institute), which relate to corresponding ISO standards.

14. The directives which regulate the mandatory certification have to be speedily implemented by all EU member states. For voluntary certification, the European Organization for Testing and Certification (EOTC), established in 1990, of which Poland is a member, has been given the responsibility of creating a European system of conformity assessment. In Poland, changes and improvements will be required also in the voluntary area. The EU systems of conformity assessment is described in detail in a handbook issued by the European Commission.

15. There is at present no globally harmonized or recognized conformity assessment system for mining equipment and materials at large. The creation of a worldwide system is therefore being promoted in several fora. The New Approach and the Global Approach (which aims at establishing conditions for the mutual recognition of a notified body's test results by all EU member states) adopted in the EU for conformity assessment, the WTO/TBT Agreement and the Guides and Standards drawn up by the ISO/CASCO (Committee on Conformity Assessment) are important instruments and steps for harmonizing conformity assessment on a regional and worldwide scale in the interest of facilitating international trade and economic integration. A significant achievement in global harmonization of conformity assessment represents the worldwide certification scheme for explosion protected equipment developed by the IEC, the so-called IECEX Scheme.

16. The Scheme was explained in detail at the Workshop. From the first questionnaire in 1991 it took eight years to develop it to the present stage of application. At present, there are 20 participating countries. A prerequisite for progress was that the Scheme uses existing internationally agreed ISO/IEC standards both to evaluate potential participants and to establish the suitability of products for use in hazardous locations. A certificate of conformity can be issued by any member certification body of the Scheme. The ultimate objective of the Scheme is worldwide acceptance of a single standard, a single certificate and a single mark. The benefits will be reduced time and costs for manufacturers selling into the world market. Success of the Scheme will depend on the ability to issue certificates which command the recognition of manufacturers, users and regulatory authorities worldwide. For this to happen, the Scheme needs to overcome the obstacles of national regulations, national standards and lack of mutual confidence by providing a high level of assurance that the essential safety requirements for explosion protected products will be met.

Recommendations:

17. Expert meetings devoted to the topic of harmonization of conformity assessment relating to mining equipment and materials should be organized at regular intervals to maintain contacts and cooperation among the concerned parties, i.e. government departments, international organizations, the mining

industry, equipment manufacturers and the business community in the countries in western and eastern Europe and the CIS.

18. A Working Group composed of specialists from interested countries should be established under the auspices of the ECE Committee on Sustainable Energy to facilitate for countries throughout Europe the process of harmonizing their national conformity assessment systems for mining equipment and materials with those of the EU and other regional and global schemes. The Central Mining Institute of Poland, with assistance under EU programmes such as PHARE, TACIS, etc., should be the Coordinator of the Working Group, given the experience already gained and the activities currently underway in Poland in the process of acceding to the EU conformity assessment system.

19. Since regional and global harmonization of conformity assessment for mining equipment and materials is essential for expanding international trade, economic cooperation and integration, and environmental protection in ECE member countries, this item should be included in the ECE List of Sectors Requiring Standardization and the competent ECE bodies, in particular the Committee on Sustainable Energy and the Working Party on Technical Harmonization and Standardization Policies, should continue to cooperate in the activities of the international organizations aimed at these objectives.

20. The IEC ExScheme could serve as a model for the development of regional and global conformity assessment schemes for other particular groups of equipment and products used in the mining industry. Countries are encouraged to participate in the meetings and activities of the Scheme and to endeavour to become members. Eastern European and CIS countries should be active in harmonizing their standards with the IEC and ISO standards as a first step to alignment with and membership in the worldwide IECEX scheme.

Session II

Chairman: I. Cleare (IEC); Vice-Chairman: G. Pazdziorek (Poland)

21. The following presentations were made and discussed: B. Miareczko, Central Institute of Labour Protection, Poland: Harmonization of the national certification system of individual protection means with requirements of the European Union; M. Stellmacher, TÜV Certification, Germany: Certification - symptom or fashion?; P. Krzystolik, Central Mining Institute, Poland: Mutual acknowledgement of the test results of electrical explosion-proof equipment and changes in this scope in the light of introduction of the ATEX Directive in Poland; F. Baltaretu and G. Tipei, IPROMIN, Romania: Accommodation to qualitative regulations of the EU - an essential component of the effectiveness in mining industry; J. Irek, Central Mining Institute, Poland: Admission and certification of machines and equipment for underground works in the light of the EU Machinery Directive.

Main conclusions:

22. The country reports presented covered a number of issues of conformity assessment, mainly concerning the implementation of EU directives, in Germany, Romania and Poland. Currently, the countries use their own standards alongside with regional and international standards. The historical differences between east and west European standards explain why the adjustment to the EU system is more difficult for some European countries than others. However, there are also similarities throughout Europe which facilitate the harmonization process. The driving force behind conformity assessment of products and services was and continues to be the need to ensure the highest standards of safety, health and environment protection. The importance of certification for quality assurance and hence as a marketing tool was also confirmed.

23. Since the EU is the largest integrated market and economic union in Europe, it is driving and dominating harmonization of standards and regulations in the European region. The standards drawn up by the ISO and IEC also serve as harmonization instruments at the regional as well as global level. Since practically all east European and CIS countries are members of ISO and many of them of the IEC, these countries may participate in the activities of these organizations including those relating to harmonization of conformity assessment.

24. While the use of the ISO and IEC standards is voluntary, once a country is a member of the EU it has an obligation to apply the EU directives and EU standards. The steps taken to date by a number of east European countries in their target of EU-conformity comprise adapting legislation, reforming the relevant institutions, harmonizing national standards and adopting ISO and IEC standards, modernizing testing equipment, simplifying procedures and documentation, translating directives and required information materials, participating in technical committees, seminars and training courses.

25. Some particular issues and problems arising in the process of achieving EU conformity which were put forward for discussion at the session included the following: How to deal with differences between national legislation, standards, definitions and classifications of products and the requirements of the EU directives; the discrepancies arising in translation into different languages; different criteria for determining obligatory and voluntary certification; conditions or accreditation; how to recognize the competence and technological maturity of certification bodies; the need to accommodate country-specific requirements resulting from country-specific features and conditions; how to ensure that country-specific safety standards are not lowered. Such differences have to be overcome if a country wishes to participate in and benefit from a harmonized system.

26. For example, a means to overcome the problem of mutual recognition has been bilateral reciprocal recognition agreements between accredited certification bodies or testing laboratories of different countries. They exist in many west and east European countries. A difficulty still remains because of the different levels of mutual recognition, namely that of the accreditation bodies and at the Government level. Within the EU, the "New Approach" conformity assessment systems also brings mutual recognition of conformity assessment. For third countries, the EU has developed the "Global Approach to Certification and Testing" which aims at achieving mutual acceptance of tests and certification within both the mandatory and the voluntary sector. The EU also concluded agreements with Governments (e.g. New Zealand, USA) for mutual acceptance of certification for specific groups of products.

27. One presentation to the session stressed in particular that the process would be facilitated if conformity assessment was not only looked at as a legal or market-driven obligation but also as part of a modern quality management system and a new safety culture in the industry sectors concerned. The benefits to be gained from such an approach would include making manufacturers recognize the workers' contribution to quality, helping industry meet customers' needs and developing a quality management system to the benefit of all concerned parties.

28. Experts from western and eastern Europe recognized that the transposition of a national conformity assessment system to the EU system is not an easy task. The presentation by a specialist from Germany confirmed this conclusion. A thorough study of the EU directives is necessary to understand the demands. Even then, confusion may arise over the different procedures which apply for different directives. Moreover, east European countries do not have easy and ready access to the necessary information and documentation.

29. In Germany, a whole series of EU directives for improvement of health and safety at work, especially for mining, have already been transposed into national law. In contrast to the old system, the "New Approach to Technical Harmonization and Standardization" is not product-related but risk-related, and provides for "modules" for assessment and demonstration of conformity with the requirements of the directives. Analysis of a few examples such as the "Machinery Directive" and the "ATEX Directive" showed that the replacement of the German approval procedures by the new EU directives has brought some changes for the parties involved in conformity assessment including in their responsibilities. The high level of industrial safety in Germany has not been reduced by this change. Until their harmonization with EU standards, the German safety standards continue to be valid. Sharing the experience of Germany with the EU accession countries might be helpful to them.

Recommendations:

30. The "New Approach to Technical Harmonization and Standardization" of the EU, which is aimed at implementing the policy of free movement of goods throughout the EU, should be cleared with the worldwide standardization bodies IEC and ISO. Experts from Poland and other east European and CIS countries should actively participate in the work of the IEC and ISO Technical Committees.

31. The experience gained by further advanced EU member countries such as Germany and EU accession countries such as Poland in adopting the EU conformity assessment system, should be shared with interested countries in eastern Europe and the CIS under the assistance of EU cooperative programmes such as PHARE, TACIS, etc.

32. In order to enable the mutual acceptance of certificates related to mining equipment and materials in the future, cooperation of testing laboratories engaged in this field should be strengthened, for example through a special meeting of their representatives during the biennial International Conferences of Safety Institutes in Mines. This would deepen the confidence in the test results of the laboratories participating in this cooperation.

Session III

Chairman: R. Jockers (Germany); Vice-Chairman: B. Miareczko (Poland)

33. The following presentations were made and discussed: H. Michaely, ISO/TC82 and FABERG, Germany: Standards in the mining industry; P. Pashkovsky and V. Kozatchenko, RESPIRATOR, Ukraine: Certification of materials and equipment used in Ukrainian mines according to fire safety indices; P. Hetherington, RJB Mining (UK) Ltd, United Kingdom: Operational standards applied to high voltage coal face equipment in UK mines; V. Raevski, Skochinsky Institute, Russian Federation; National organizations participating in the certification of mining equipment and course of their admission for use by enterprises subordinated to the State Mining Inspection of Russia; M. Kocuvan, Standards and Metrology Institute, Republic of Slovenia: Certificate of assessment in the field of mining industry and explosion protection; . Negrevski, V. Radeva and C. Christov, Committee of Energy, Bulgaria: Information on the state of standardization, certification and normative acts in Bulgaria in the scope of the extractive industry and mining equipment; M. Paraian, F. Patrascu and C. Zoller, INSEMEX, Romania: Considerations of safety requirements for non-metal materials and products used in potentially explosive atmospheres; I. Caprar and I. Vanatori, INSEMEX, Romania: Specific aspects regarding safety in work and certification of technical equipment intended for use in the mining industry; B. Hoxha,

Ministry of Public Economy and Privatization, Albania: Some remarks on safety and environmental protection in the Albanian mining industry.

Main conclusions:

34. The presentations by specialists from a range of European countries offered a wealth of information about requirements, standards and procedures for conformity assessment in eastern and western Europe, and enabled a comparison and analysis of the differences and similarities. All participants agreed that the Workshop was a highly useful forum for obtaining up-to-date information on this topic. Furthermore, it had led to a better understanding of the problems and issues confronting countries in preparing for harmonization with the EU conformity assessment system or in applying international standards. While the benefits of a harmonized conformity assessment system were generally recognized, the participants agreed that there is not only one good method for attaining this aim.

35. National and international standards and institutions are playing an important role in the harmonization process. The EU regional and the ISO/IEC international standards applying to mining equipment and materials and the work methods of the organizations for standardization were explained in detail at the session. This presentation provided comprehensive information on the subject and demonstrated that quite a number of national, EU and international standards are relevant to the mining industry and that standardization and harmonization of standards is complex, time-consuming and costly. A major problem to overcome in developing regionally and globally agreed standards is the inclusion of all the requirements existing in the individual countries. Early cooperation of all interested countries and parties in standardization is absolutely necessary.

36. As for national characteristics, in Ukraine, for example, the legislation for conformity assessment of mining equipment does not differ from other European countries, but the national standards, although they are based on the experience of many countries in the world, are different and in general more severe since there are specific hazards to safety and health in Ukrainian underground mines. This is one difficulty for mutual acceptance of certification. Ukraine would be interested in international cooperation aimed at developing solutions for facilitating harmonization, access to information about the experiences of other countries and professional contacts in general.

37. In the Russian Federation, many national standards for certification of mining equipment are in compliance with those of west European countries. The major differences are in the procedures. Harmonization with European certification procedures is an aim in the Russian Federation, especially for imported machines and devices. Russian specialists are interested in

participating in activities leading to greater harmonization in conformity assessment throughout Europe.

38. In Slovenia, the importance for international economic cooperation and trade of a harmonized certification system for mining equipment is fully recognized. Slovenia, as a near-term accession candidate to the EU, is preparing for implementation of the EU conformity assessment system. Slovenia, too, is interested in participating in cooperative programmes aimed at promoting a harmonized conformity assessment system throughout Europe.

39. In Bulgaria, which is associated with the EU, the development of a EU-conform certification system has only just started. To date, standards of the former CMEA are in use alongside ISO standards. Accreditation bodies have only recently been established and the competent certified laboratories still need to be accredited. Bulgarian specialists need information, advice and training, and are therefore interested in participating in cooperative programmes aimed at facilitating access to a harmonized European certification system.

40. The presentations from Romanian specialists addressed two specific problems, namely which standards should be applied for the certification of non-metallic products used in potentially explosive atmospheres; and how to perform certification to ensure that the essential requirements for safety, health and environmental protection are met by used or repaired mining machines and equipment not meeting any standards, imported from the European market.

41. A specialist from Albania also stressed that the importation and use of second-hand and repaired mining equipment poses problems for safety and environment protection and that this problem is increasing in Albania with the progressing privatization of the mining industry. Albania had received assistance in the field of certification in the form of workshops and training under the PHARE programme and is highly interested in continued assistance.

42. In the ensuing discussion, the need for overcoming these problems was stressed. It was pointed out that the responsibility for regulation and supervision of second-hand equipment rests with the importing country. In principle, any old, second-hand and repaired equipment should be treated like a new machine and the standards and procedures should be applied accordingly.

43. The need to take into account the implications of technological advancement in the mining industry was highlighted by a specialist from the UK. Using the example of longwall mining and the use of high voltage coal face equipment, which was first introduced in the UK in 1989, he made the point that high technology can imply higher occupational and environmental risks and hence require more severe protection standards and certification.

Recommendations:

44. It would be useful to include in future expert meetings on certification a comparative analysis of national, regional and international standards and conformity assessment schemes such as the "ATEX Directive" of the EU and the worldwide IECEx Scheme, to assist countries in eastern Europe and the CIS in acquiring a better understanding of the underlying requirements and aims.

45. Workshops, training courses and advisory missions should be organized with financial assistance under EU cooperative programmes to familiarize east European and CIS countries with the EU conformity assessment system, and to assist interested countries in harmonizing their systems with that of the EU and in finding solutions for overcoming difficulties in this respect.

46. Any national or international conformity assessment system needs to take into account technological change and advancement in mining and, if necessary, adapt, so that it continues to fulfill the overriding purposes of ensuring the highest standards of safety, health and environment protection.

Session IV

Chairman: P. Krzystolik (Poland); Vice-Chairman: I.N. Caprar (Romania)

47. The following presentations were made and discussed: W. Szepietowski, Research Institute of Opencast Mining "Poltegor", Poland: Some problems of validation research for specialized mining and dumping machines in surface mining; J. Wachowicz and J. Irek, Central Mining Institute, Poland: Admission and certification of non-metallic materials for use in underground mine workings in Poland; J.A. Toltchenkin, Inter-Departmental Certification Body "Certiam", Russian Federation: Certification system of mining and explosion protected electrical equipment in Russia.

Main conclusions:

48. The session afforded an opportunity to exchange opinions on some specific problems related to certification, mutual acceptance and harmonization. Additionally, some issues raised in other sessions were discussed in more detail. The range of issues considered comprised the following: Bilateral agreements for mutual acceptance of certification; considerations in certification costs; how to solve the inconsistencies between EU standards and those of east European and CIS countries; how to ensure safety, health and environment protection for mining machines and equipment for which there are no specific standards and regulations; how to perform certification for specialized or large and complex underground and opencast mining machines which cannot be tested in a laboratory but only in situ; the need for harmonized computer programmes for certification and related documents;

should/could there be in future an all-European certification scheme and certification centre for mining equipment and materials in the mandatory and voluntary sector.

Recommendations:

49. The report and recommendations of the Workshop should be disseminated through the Internet so that they reach all interested sectors, including the equipment manufacturers and the business community at large, and encourage wide participation in any follow-up activities;

50. Computer programmes connected with the conformity assessment process should be the object of standardization;

51. Since the European mining industry, especially coal production, is "going east", particular attention should be paid to the countries in that subregion. Workshops, training courses and advisory missions should be organized in east European and CIS countries with the assistance of PHARE, TACIS and other EU cooperative programmes to develop solutions to specific problems in conformity assessment of mining equipment and materials, taking advantage of the experiences already gained in western Europe and other parts of the world.

52. To promote close cooperation and confidence among accredited certification bodies of different countries, a meeting of representatives of accredited testing laboratories should be organized during the next International Conference of National Institute for Safety in Mines, which will take place in Sinaia, Romania, in June 1999.

CLOSING SESSION

53. The Vice-Chairman thanked the participants for their participation and contributions and expressed his satisfaction with the outcome of the Workshop. The representative of the ECE secretariat thanked the Government and the host organizations of Poland as well as the EC Energy Centre Katowice for having organized this event and expressed the wish for future fruitful cooperation in any follow-up activities.

54. The presentations and recommendations made at the Workshop, including a short report prepared by the ECE secretariat, will be published by the Central Mining Institute of Poland and given wide dissemination. The report will be submitted to the ECE Committee on Sustainable Energy at its next session in September 1999.
