THE NEW CULTURE OF WORK SAFETY IN THE STEELWORKS PLANT

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ABSTRACT:
The aim of this article is to present the key elements of safety culture in steelworks plant. The health and safety management systems were introduced in companies following the implementation of quality and environment management systems. Modern steelworks plants realize the strategy of the safety of work to protect workers' health. The first step in safety of work is defining the safety policy and the basic principles. At this stage companies undertake actions aimed at raising their workers' awareness of work safety. New values are presented to the workers and new attitudes are shaped so as to ensure the safety of work. In other words a new work culture is created. Workers themselves look after their safety while performing specific tasks. Their works as well as the whole safety assurance are subject to controls (audits, inspections, monitoring). The health and safety management as a whole is based on the continuous improvement concept i.e. plan, do, check, act (the Deming cycle). The enterprises that realize the management aim at the reduction of the number of accidents at work. As an example the main actions to prevent accidents and to build the culture of safety at the metallurgical company Arcelor Mittal Poland were presented.
KEY WORDS:
culture of safety of work, safety policy, audit, training

1. INTRODUCTION

The health and safety management system is connected with new culture of organization. An important objective of health and safety management is to minimize the number of accidents and prevent them by identifying and eliminating the most dangerous spots on the site. Health and safety at work is a set of legal regulations and research, organizational and technical measures aimed at the creation of such working environment that would not expose a worker's health or life to the hazards present in the work place. In its strategy a modern steelworks plant should take into account health and safety issues.

An important part of work safety is building a new corporate culture. It is first and foremost the workers, their motivation and actions that lead to errors that subsequently decide about their life and the lives of their co-workers. Studies made at the steel producer Arcelor Mittal Poland show that approximately 64.7% of all accidents are caused by human errors and routine, whereas 35.3% of accidents are due to bad work organization [1]. The above data illustrate how important the human factor is in the management of health and safety at work. One may develop very good regulations, create a theoretically great health and safety management system but if workers do not adopt new values or attitudes, all actions are ineffective. Therefore the issue of safe work culture is of utmost importance.

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2. THE CULTURE OF THE WORK SAFETY

The culture of work safety at a company is an element of its corporate culture. The concept of corporate culture has gained importance along with the development of the globalization process. The corporate culture is a system accepted by a group of people belonging to a given organization [Edgar Schein (1985)]. In the case of a company, its corporate culture is defined by the values, beliefs, attitudes and expectations of its employees. Generally speaking, corporate culture is a method of structuring the life of a group. Culture has always been connected with a human being. A man is its creator who is at the same time shaped by it [2]. The culture of work safety at a company could be understood as an element binding the health and safety management system through common standards, beliefs and values. The culture of safety can be recognized by its manifestations, the most important of which are: ensuring order at a workplace (companies may use the 5S method to make it easier)[3], economical use of resources, materials and energy, etc., adoption of the safety at work management system, active participation in the improvement of the said system, upgrading one's qualifications and skills (participation in trainings on health and safety at work), learning from potential accidents, ensuring work safety in a broader sense [4]. The tools employed in the creation of work safety culture within companies are: audiovisual tools (newspapers, leaflets, brochures, films, corporate gadgets, and notice boards), trainings, talks, lectures, instructions, competitions on work safety knowledge, marketing campaigns, inter-company competition, Safety Day celebrations, etc.

To establish the new culture the company has got the proper safety policy. It is a declaration of the management according to which the protection of employees' health and lives constitutes a matter of overriding importance in the organization. The value statement in the company ArcelorMittal is: "We are committed to the health and safety of all employees, both on and off the job in order to become the most admired steel company". While developing a health and safety policy it is necessary to define the strategic and operational goals in the said area. In the metallurgical enterprise the goal is "zero accidents"[1,5] To reach the goal the company ArcelorMittal has done all tasks at all stages required by the PN – N 18001 standard, thus creating a health and safety management system. The risk of life and health loss has been estimated at individual workplaces with a view to reducing it; the work safety regulations have been established; a number of technological investments have been made so that work was free of those elements that are likely to cause an accident or loss of health and yearly safety improvement action plans have been implemented at specific plants (ArcelorMittal in Poland was created on the basis of four biggest Polish steelworks located in Kraków, Dąbrowa Górnicza, Sosnowiec and Świętochłowice). To protect workers from injuries the company equips them with protective clothing and individual protection measures. The concern all over the world creates new culture of organization. One element of them is the culture of safety of work. The culture depends on state of human consciousness/awareness (on individual) according to his safety behavior in process of work. Conscious workers create the culture of safety of work. So the ArcelorMittal concern organizes actions to improve workers' culture of safety of work. This year the second *Safety Day* was organized. There is the personnel development system in the company. Workers and managers take part in trainings [1,5]. In 2007 about 76% of all participants took part in training about the health and safety of work (table 1).

In 2007 in the concern Arcelor Mittal Poland 1 011 trainings were realized. Health and safety at work trainings belong to obligatory. More than 50% of all trainings were included among the category (fig. 1). The company realizes them because their workers must obey the low. During trainings workers learn the new procedures and standards to better work. In 2007 16 560 employees took part in obligatory trainings. About 60% of them took part in training about the health and safety of work. During trainings some themes were realized:

- health and safety at work trainings (basic, periodical),
- compulsory health and safety at work trainings,
- examinations (SEP - Association of Polish Electrical Engineers, UDT - Office of Technical Inspection) – fig. 2.

Table 1. Detailed information on trainings at ArcelorMittal Poland (as at 2007) [6]

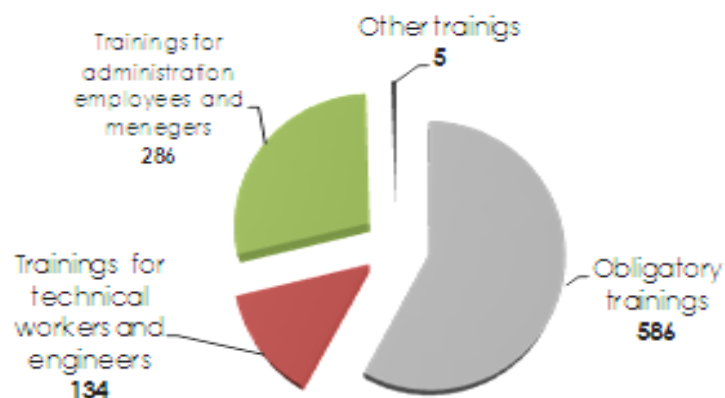| Trainings themes	No. of trainings	No. of training days	No. of participants
Health and safety at work trainings (basic, periodical)	300	387	9 966
Compulsory health and safety at work trainings	211	1 857	4 533
Examinations (SEP - Association of Polish Electrical Engineers, UDT - Office of Technical Inspection)	75	78	2 061
Total	586	2 322	16 560
Engineering and technology	106	278	388
Trainings for mechanics	3	30	6
Trainings for electricians	11	42	92
Trainings for power engineers	14	49	204
Trainings for electricians and automation specialists	0	0	0
Total	134	399	690
Trainings for auxiliary services	37	80	175
Finances	44	133	331
Investments and renovations	10	51	13
Integrated management systems	56	96	2 128
Computers	49	184	268
Management and administration	74	192	809
Trade	14	26	114
Logistics	1	1	1
Marketing	1	2	7
Total	286	765	3 846
In-service training – universities and colleges	0	0	38
MBA	0	0	3
Total	0	0	41
English	3	0	686
Online English (Global English)	1	0	27
Polish	1	0	12
Total	5	0	725
TOTAL	**1 011**	**3 486**	**21 862**

Fig. 1. Trainings in ArcelorMittal Poland
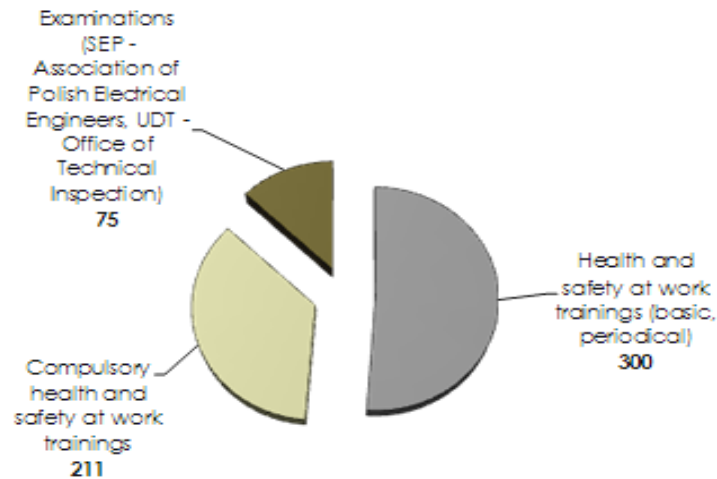in 2007 [6]

Fig. 2. The structure of obligatory trainings in ArcelorMittal Poland [6]

Electricians, computer workers, power engineers, technical service workers, mechanical engineers took part in trainings to improve their professional qualifications and knowledge. In the company Arcelor Mittal Poland a part of trainings were realized on the work places (fig. 3).
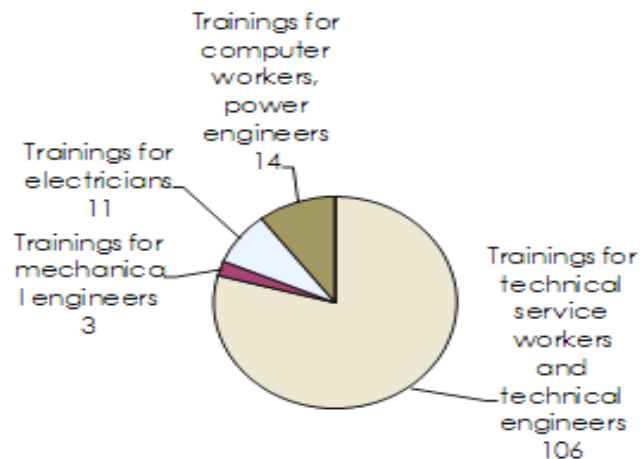

Fig. 3. Trainings for engineers and technical workers in ArcelroMittal Poland in 2007 [6]

In 2007 about 18% of all participants took part in training about management and administration system. Very popular there were trainings about integrated management systems (quality management system, environmental management system, health and safety management system). In 2007 2128 persons took place in them. Besides in company ArcelorMittal Poland financial, computer, trade, marketing, logistics trainings were realized too (fig. 4). The last group of trainings were foreign languages. Employees in ArcelorMittal learn English, Polish, and others. In English language course 686 persons took part, in Polish language course – 12 persons. Besides 41 employees attempted to University (38 persons) and MBA study (3 persons) – fig. 4.

Conclusion – in ArcelorMittal Poland dominated trainings on health and safety at work. Such a great number of trainings should bring about notable effects in the form of a decrease in the number of accidents that have occurred due to worker's error.
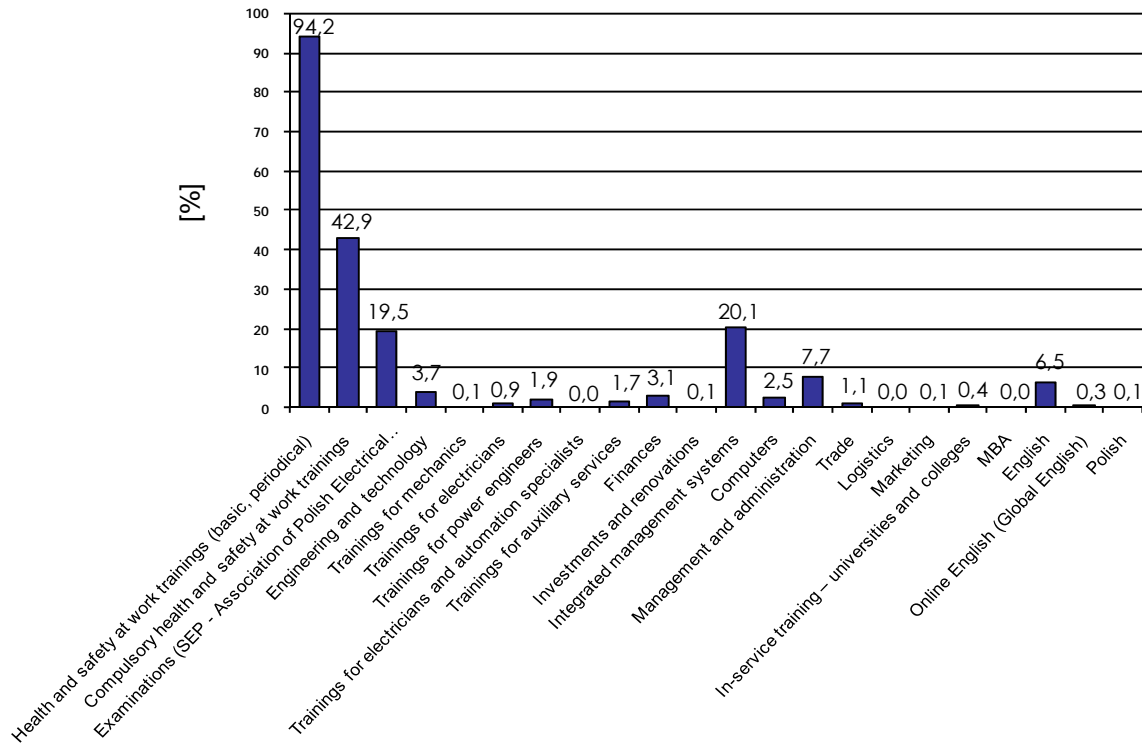
Fig. 4. Trainings themes in ArcelorMittal in 2007 (%)

3. AUDIT OF THE HEALTH AND SAFETY SYSTEM

One of the basic mechanisms of continuous improvement of the health and safety system are audits. Audits are carried out by specialized employees – internal audits or by specialist firms - external audits. Figure 5 shows the distribution of non-conformities with regard to the requirements of the PN-N-18001:2004 standard provisions in the second half of 2006 and first half of 2007.
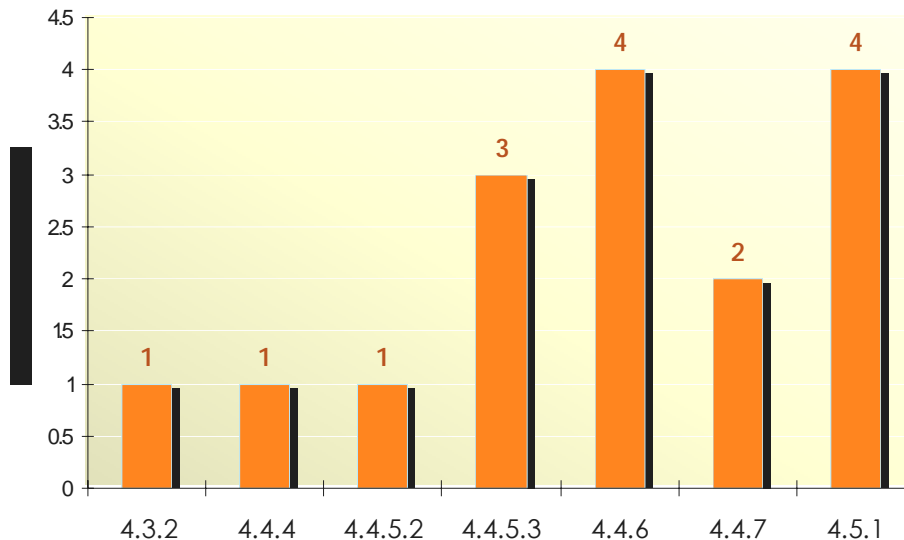

Fig. 5. The distribution of non-conformities with regard to the requirements of the PN-N-18001:2004 standard provisions in the second half of 2006 and first half of 2007[7]

The non-conformities were found with those provisions of the standard that refer to the occupational risk management, monitoring, compliance with legal regulations, communication rules, supervision over entries in system documentation, organization of works connected with considerable danger. The greatest number of non-conformities in the analyzed period in the health and safety system related to point 4.4.6 "Occupational risk management" and point 4.5.1. "Monitoring". Those non-conformities constituted 50% of all reported non-conformities. Corrective actions were taken immediately and the detected non-conformities were eliminated [7].

4. CONCLUSION

The reduction of the accident rate in Arcelor Mittal Poland is to be accomplished through the following actions: a comprehensive involvement of workers, worker observation and reporting workers' behavior, collection of data on health and safety at work and their use in the removal of barriers and threats, implementation of health and safety procedures and system, regular audits, implementation of annual action plans for the improvement of safety in individual production plants. Together with the health and safety strategy in the plants there are not only annual working conditions improvement plans but also programs to raise workers' awareness. As health and safety are also a marketing tool for the company the following slogan has been adopted: *We build a safe organization. We are not as strong as our products and therefore health and safety issues are our priority*.[9]

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