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EUROPEAN STANDARDS IMPLEMENTATION IN THE AREA OF OCCUPATIONAL HEALTH AND SAFETY IN POLISH ENTERPRISES

The aim of the study is to analyze how Polish employers fulfill their responsibilities in terms of providing safe and healthy working conditions, including: standards for risk assessment, and adaptation of machinery to legal requirements.

The research was conducted by questioning 2000 economic entrepreneurs and based on the results from the questionnaire prepared by the expert team. The results prove that, despite the adjustment of Polish law to EU standards, Polish employers still do not adequately fulfill their obligations in terms of occupational health and safety .

Moreover, the study shows that implementation of the OSH management system supports the implementation of existing legislation related to safety at work.

1. Introduction

Occupational health and safety applies to the entire organization; it is in close connection with the crisis situation that may appear. Mistakes in health and safety at management level , in decision making, and employee behavior can not only lead to accidents at work, but can also have serious consequences for health, citizens' lives and the environment. Analysis of accidents at work in EU countries allows areas (sectors) to be identified, as well as an analysis of human and economic loss [1, 6, 7, 8, 21].

Although it is a long time since the process of adjusting the Polish law in the area of health and safety to EU standards was completed, the standard in Polish companies is not satisfactory. Implementing management system rules such as:

taking proactive actions, building safety awareness, shaping pro-safety attitudes, motivating for safe work, and employee participation is not sufficient to achieve full compliance with EU standards [23, 24].

The legal requirement to conduct risk assessment, to inform employees about the risks and to complete the documentation connected with risk is still a big problem in Polish enterprises. The machinery that is often old and does not meet current EU standards is also a crucial problem [22].

The purpose of this article is to analyze if formal and legal requirements are being fulfilled by employers in the area of occupational health and safety and to answer the question of whether the implementation of an OSH management system helps employers meet the requirements of Polish law.

2. Selected aspects of the European Union Law in terms of Occupational Risk Assessment and Machinery & Technical Devices

The work health and safety legal regulations constitute the most extensive in EU Labor Laws. On one hand, it testifies to huge importance drawn to these matters in the EU, on the other hand it proves that there is a real need and possibility to unify these problems in the EU member states.

Among the duties imposed on employers by Article 6 of the Directive 89/391/EEC is the requirement to take all necessary measures to ensure safety and health protection of the employees, including work risk prevention, information, organizing training, providing the necessary means and adequate organization. An employer should be prepared to adapt these measures, depending on the changing circumstances and in order to improve the existing state of the matter.

Within the process of harmonizing the regulations currently in force in Poland with the provisions of Directive 89/391/EEC of the European Community, regarding the employer's liability for risk assessment, appropriate entries were made in numerous legal acts, i.e.:

- Act of Law of 26 June 1974, Labor Code [3],
- Ordinance of Minister of Labor and Social Policy of 26 September 1997 on general provisions for safety and health at work [12],
- Ordinance of Minister of Labor and Social Policy of 14 March 2000 on occupational health and safety in manual transport jobs [14],
- Ordinance of the Minister of Labor and Social Policy of 1 December 1998 on occupational health and safety on posts equipped in screens [15],

- Ordinance of the Minister of Health of 22 April 2005 on biological factors harmful to health in the working environment, and health protection for employees subject to these factors [16],
- Ordinance of the Minister of Health of 30 December 2004 on occupational health and safety connected with the presence of the chemical factors [17].
- Ordinance of the Minister of Health on substances, preparations, carcinogenic and mutagen factors or technological processes in the workplace [18].

The Directive 89/391/EEC has been reflected in the norms: PN-N-18001 18002-Health and safety management system – Requirements and PN-N-Safety management systems and safety at work. Guidelines for risk assessment [20].

Organization of work environment determines occupational health and safety, and so it has a significant influence on health protection of the employees. This is where the legal regulations concerning the technical state of applied machinery in workplaces gains crucial importance. Implementation of the European law as regards machinery and technical devices has been reflected in numerous legal acts, of which the following deserve particular attention:

- Act of Law of 30 August 2002 on conformity assessment system [2],
- Ordinance of the Minister of Economy of 30 October 2002 on basic requirements for machinery [13],
- Ordinance of the Minister of Economy from 30 October 2002 on minimal occupational health and safety requirements in the field of the use of machinery, by the employees during work [11].

According to the mentioned acts of law, on one hand the employer is obliged to ensure that particular machines and other technical devices provide safe and hygienic working conditions, especially protecting the employee against injuries, dangerous chemical substances, electric shock, excessive noise, mechanical vibrations and radiation, as well as harmful and dangerous influence of other working environment factors; while on the other hand they impose care for the right technical condition of the machinery, tools and equipment, as well as care for neatness and order at the workplace, as the duty of the employee. These activities develop in Polish enterprises [9].

3. Assumptions of the Project and Methodology of Research

A research project: "Evaluation and Assessment of Adaptation in Lodz Enterprises and among Health and Safety Personnel to the Changes in Regulations and Market Demands" [22] has been carried out within the confines of Priority 8 – Regional Economic Personnel. At the preliminary stage, a diagnostic tool was prepared in the form of a questionnaire. At that stage also, the interviewers were trained and a pilot study has been done in a group of 100 employers. The aim of the pilot study was to verify the research tool and create adequate procedures for

the interviewers – all in order to increase the reliability and scientific value of the project. During the second stage; the research sample had been selected, in the number of 2000 employers. The research was carried out at the employer's premises. The group reflected the general population of entrepreneurship in the Lodz region – the sample selection method had been used, with the following criteria in mind:

- Entity size, as regards employment value,
- Location (districts),
- Activity profile, as per NACE.

The detailed aims of the project would include:

- Finding out about the need to implement new standards described in the EU directives,
- Learning about the advancement of the EU directives implementation process,
- Designating possible obstacles which occur while implementing changes in a company.

The substantial part of the tool for research among the employers include among others: Machinery and other technical devices; Health protection oriented preventive measures – risk assessment.

4. Research Sample Characteristics

Analyzing the group in question, we may divide it according to the company size criterion. Over a half of the studied companies, i. e. $n = 1535$, employs 1-10 persons, which amounts to 76.75% of the population subject to research. There were $n = 212$ companies which employ 11-20 persons (10.60%), while the number of the largest entities, employing over 600 persons, $n = 12$, constituted only 0.60% of the researched entities. By localization, the city of Lodz was most numerously represented (41.90%; $n = 838$). By company profile, the largest group is the sales sector (32.60%; $n = 652$). The implementation process is in progress.

The research results analysis showed that only as few as 187 entities (9.35%) declares implementation of a management system. Of these, 129 companies (6.45%) have introduced a management system compatible with the ISO 9001:2000 standard; 17 companies have implemented health and safety management systems, eg compatible with the polish standard PN-N 18001:2007 [19] – 4 companies and compatible with OHSAS 18001 [10] – 13 companies, while 16 companies have introduced the environmental management system PN-EN ISO 14001:2005. 70 entities declare the management system 1742 enterprises (90.65%) have not implemented any management system in their organization.

5. Research Results

5.1. Occupational Risk and Its Assessment

The most crucial element is prevention against accidents is a reliably conducted occupational risk assessment. It is the obligation of the employee to perform the evaluation. This legal requirement results from Article no. 226 of the Labor Code and applies to every work post. Hence, the respondents were asked about the work posts for which the occupational risk assessment has been carried out. The structure of responses is shown in Table 1.

Table 1. Responses concerning occupational risk assessment

| Has the occupational risk assessment been done? | n | share [%] |
|--|-------------|------------------|
| Yes | 963 | 48.15% |
| No | 274 | 13.70% |
| Don't know | 180 | 9.00% |
| Doesn't apply | 583 | 29.15% |
| Total | 2000 | 100.00% |

Source: own.

Only ca. a half of the entities ($n = 963$) declares having done the occupational risk assessment on work posts. 274 employers (13.70%) is aware of the fact that – and admits that occupational risk has not been assessed in their company, while every 1 out of 11 ($n = 180$; 9.00%) has no knowledge on the subject. These statistics are not particularly astonishing, especially in the context of a huge number of “does not apply” responses ($n = 583$; 29.15%). These results have been analyzed as per the company size and definitely the most numerous are the smallest entities, employing 1 to 10 persons. Risk assessment has not been done in the companies which employ over 100 persons ($n = 2$), where, as we know, the health and safety services should be continuously “at hand”, to support the employers with the occupational risk assessment. In case of the biggest companies, employing over 600 people, 3 respondents gave the “I don't know” answer. Since the questions in the metric allow for the survey respondents to be categorized according to various different criteria, the group of these “negative” enterprises was analyzed according to system management. The results are presented by Fig. 1.

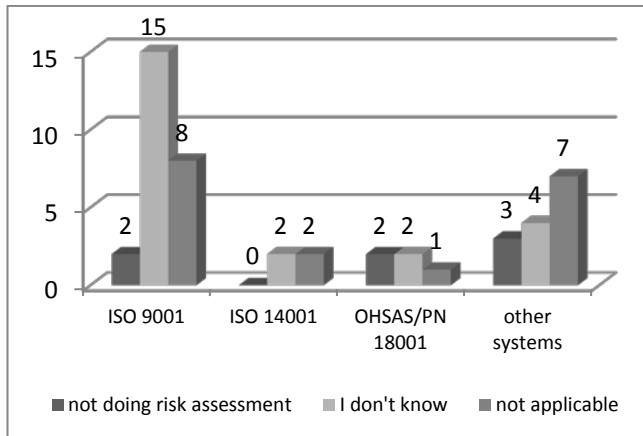


Fig. 1. Implemented management systems in the group of enterprises, which provide "negative answers" as to occupational risk assessment

Source: own.

As you can see, among the companies, which failed to pass the test of occupational risk assessment, 48 entities (4.58% of the group) have implemented a management system. It seems unbelievable that the highest management which should be involved in the implementation, functioning and controlling of the systems, resulting from the provisions of the relevant normative acts, openly admits to neglecting them, or has no awareness whatsoever, that the legal obligation to perform the occupational risk assessment applies to them. A starting point for any management system implementation is that one should meet the legal requirements, which certainly reflects itself in the policies of the companies. Moreover, for the ISO 9001, ISO 14001, OHSAS/PN-N 18001 standard series, a documented procedure is required as to how legal requirements are dealt with. One might well conclude that apart from non-compliance with the law, the attitude and commitment to the systems on the part of the highest management in these companies leave a lot to be desired [5].

To specify the question, the number of work posts, for which risk assessment should be done, was evaluated. In 274 entities, where risk assessment has not been carried out, 940 work posts were identified in the total number of (9.45%), while in 583 companies to which, in the opinion of the respondents, the regulation doesn't apply, there is over 1341 posts (13.49%). Definitely then, the employers failed to fulfill their basic code obligation towards the persons employed at these posts.

In accordance with previously quoted art. 226, p. 2 of the Labor Code, the employer is to inform the employees on the occupational risk connected with their job. In this area, only those respondents could take a stand, who had

declared having carried out the occupational risk assessment ($n = 963$), while the remaining group of 1047 companies did not provide an answer to this conditional question. The law does not specify in what way the employees should be informed about the results of the assessment, however the most adequate moment for this seems to be the initial training – instruction for the work position. Almost all respondents ($n = 950$; 98.60% of the group), when asked about the fact of informing their subordinates, provided a positive answer. 10 of the interviewed have no knowledge in the subject, and only 3 of them admitted they haven't passed on such information to employees. For this group of respondents ($n = 950$) who informed the employees about the risk assessment results, the very form of passing the information has been analyzed. The entrepreneurs prefer the written form, confirming that the occupational risk has been made known; they constitute above 85% of 950 interviewed [5].

Referring to the Article no. 226, p. 1 of the Labor Code and the Ordinance of the Minister of Labor and Social Policy on general provisions concerning occupational health and safety, par. 39a, p. 3, it should be noted that 85.87% of the respondents who performed the occupational risk assessment ($n = 827$) declares documenting this fact. The remaining part of the entrepreneurs does not possess proper documentation ($n = 96$) thus breaking the law. Some have no knowledge in the subject ($n = 40$). The results are presented by Fig. 2.

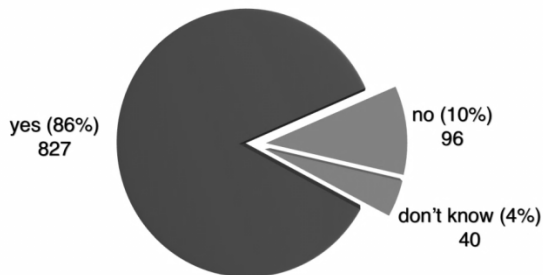


Fig. 2. Documenting occupational risk assessment

Source: own.

The parametric test verifying the hypothesis on the equality of two structure ratios for two large samples, with populations higher than 50, was used in order to compare the knowledge of respondents which have and do not have the management systems implemented.

Group A – companies without the management system implemented

Group B – companies with the management system implemented

For every question null hypothesis H_0 and alternative hypothesis H_1 were put forward:

$$H_0: p_1 = p_2$$

$$H_1: p_1 \neq p_2$$

The calculated statistics value

$$u = \frac{w_{i1} - w_{i2}}{\sqrt{\frac{p \cdot q}{n}}} \quad (1)$$

under the assumption H_0 hypothesis is true, has the normal asymptotic distribution. The critical value obtained from the distribution function of the standardized normal distribution, at the significance level 0.05, equals 1.64. Therefore, the double-sided H_0 hypothesis region of rejection takes the form:

$$W = (-\infty; -1.64) \cup (1.64; +\infty) \quad (2)$$

Calculated ancillary statistics are presented in Table 2

Table 2. Ancillary statistics for the parametric test of occupational risk assessment (niA, niB–number of answers for group A and B, respectively)

| Question | n_{iA} | w_{iA} | n_{iB} | w_{iB} | p | q | u |
|---|-------------|----------|------------|----------|-------|-------|-------|
| Has the occupational risk assessment been done? | | | | | | | |
| yes | 823 | 45.39% | 140 | 74.87% | 0.482 | 0.519 | 7.68 |
| no | 268 | 14.78% | 6 | 3.21% | 0.137 | 0.863 | -4.38 |
| I don't know | 158 | 8.71% | 22 | 11.76% | 0.090 | 0.910 | 1.39 |
| Doesn't apply | 564 | 31.11% | 19 | 10.16% | 0.292 | 0.709 | -6.00 |
| | 1813 | | 187 | | | | |
| Informing employees on occupational risk assessment results *) | | | | | | | |
| yes | 813 | 98.78% | 138 | 98.57% | 0.988 | 0.012 | -0.21 |
| no | 4 | 0.49% | 1 | 0.71% | 0.005 | 0.995 | 0.35 |
| I don't know | 6 | 0.73% | 1 | 0.71% | 0.007 | 0.993 | -0.02 |
| | 823 | | 140 | | | | |
| Documenting occupational risk assessment *) | | | | | | | |
| yes | 692 | 84.08% | 135 | 96.43% | 0.859 | 0.141 | 3.88 |
| no | 97 | 11.79% | 1 | 0.71% | 0.102 | 0.898 | -4.01 |
| I don't know | 34 | 4.13% | 6 | 4.29% | 0.042 | 0.958 | 0.08 |
| | 823 | | 140 | | | | |

*) applies to employers who performer occupational risk assessment

Source: own.

In case of performing occupational risk assessment it can be stated with 95% probability that Group B representatives obtained better results. The answer "I don't know" shows the value $u = 1.39$ and stays within the range $(-1,64; 1,64)$, therefore, the hypothesis on the structure ratio equality cannot be rejected. Both groups were not statistically different in the area of the lack of knowledge about the occupational risk assessment carried out in the company.

Next two questions concerned informing about the results and documenting risk assessment. Low statistics u for both groups prove management system implementation had no significant impact. In both cases they complied with the legal obligation at similar high level (over 98%).

The results obtained for the question concerning keeping record of occupational risk assessment were quite satisfactory. Companies with the management system implemented, however, gained better results and the difference was statistically significant.

What were the results in case of companies which were implementing the management of occupational health and safety system? Was their performance of higher standard? Unfortunately, only 12 out of 17 companies carried out occupational risk assessment, in 2 cases the employers chose not to execute it, 2 employers had no knowledge on this issue and 1 respondent thought it did not concern them. It seems unbelievable that senior level managers who are responsible for and should be involved systems implementation, functioning and monitoring, as imposed by the normative acts, openly admit or are completely unaware of the legal obligation to carry out occupational risk assessment. On the other hand, in case of 12 remaining companies, not only did they perform the assessment, but they also informed the employees about the results and prepared appropriate documentation.

In conclusion, companies which have the management system implemented, more frequently comply with the legal obligation to carry out the occupational risk assessment than the companies characterized by a more traditional approach to health and safety issues. The differences are statistically significant.

5.2. Machinery and Technical Devices

The machine park used in enterprises is a vague problem connected with work health and safety. The basic data concerning the machinery and technical devices under research is presented in Table 3.

Table 3. Basic statistics on machine parks being the subject of study

| | n | Share % per group |
|---|-------------|----------------------|
| Entities owning industry machines permanently embedded in the floor, including: | 335 = 100% | |
| Entities owing machines with the CE mark: | 279 | 83.28% |
| Number of entities with machinery adjusted to minimal standards: | 320 | 95.52% |
| Machines permanently embedded in the floor: | 2696 = 100% | |
| Machines with the CE mark | 2002 | 74.26% |
| Machines adapted to minimal standards | 2518 | 93.40% |

Source: own.

On May 1, 2004, Poland joined the European Union. In 2002, the Ministry of Economy issued the Ordinance on minimal occupational health and safety requirements in the field of the use of machinery by employees during work, which says, among other things that “all machinery acquired before January 1, 2003 should be, by January 1, 2006 adjusted to the minimal standards for machinery“. However, the mentioned document does not apply only to machines bought before Poland’s accession to the EU and which do not have the adequate safety certificate. The work posts equipped with machinery and technical devices should be periodically examined and adapted to the requirements of the mentioned regulation, if need be. Therefore, the employees were asked about which of their work posts fulfil the minimal health and safety standards when it comes to machinery.

Out of 335 entities, 279 declared they owned machinery and other technical devices with the CE mark, in the total number of 2002 (which constitutes 74.26% of the researched machine park), and 320 companies declare the total 93.40% of their machine park to be adapted to the minimal health and safety standards.

Taking these statistics into consideration, it has been concluded that from among 320 entities which adapted their machines to the minimal health and safety standards and 279 ones with the CE mark, as many as 225 performed the mentioned adaptation and at the same time own safety certificates for these machines. Analysing the study results further in terms of machines, there is a group of 56 entities which have no machine with the CE mark, but possess machinery adapted to the minimal standards, i.e. purchased before 2002. It amounts to 16.72% among all entities with industrial machinery.

5.2.1. Machinery and Technical Devices Inspection

According to the Ordinance on minimal requirements... as per par. 26.1 “the employer should subject the machinery to: 1) initial inspection after installation and before commissioning 2) inspection after installing the machine at another work post or elsewhere“. Therefore, this issue was also the subject of the research. The results of the study are presented in table 4.

Table 4. Documented initial inspections after machinery installation

| | No. of entities performing documented initial inspections | Share % – Entities performing documented initial inspections | Entities doing documented machinery inspections after reinstalling the machinery in another place | Share % – Entities doing documented machinery inspections after reinstalling in another place |
|------------|---|--|---|---|
| Yes | 258 | 77.01% | 211 | 62.99% |
| No | 63 | 18.81% | 111 | 33.13% |
| Don't know | 14 | 4.18% | 13 | 3.88% |
| Total | 335 | 100% | 335 | 100% |

Source: own.

So, one should notice that from among all entities with industrial machinery permanently embedded in the floor, as many as nearly one fourth did not fulfil their duty. It is a conspicuous violation of the law. The probability of accident, often with very serious consequences, is very high. As results from the previous statistics on identification of machinery on the company premises, this may be the very reason of such state of the matter, as three fourths of those who did not identify machines, haven't carried out the mentioned control.

The situation is even worse when it comes to documented inspections after installing machinery and devices in another place. In this case, a positive response came from ca. 63% (n = 211), from among all entities with industrial machinery. In as many as 111 (33.13% of 335) companies these activities have never been performed. Certainly, in many instances there were no grounds for that, as the machine had not been moved. Therefore, one may freely risk an assumption that the latter issue results provide the most reliable picture of how Polish law is obeyed, not only in this area, but also as regards mandatory inspections of machinery and devices.

The question of periodical inspections of machinery and devices shows, that nearly 85% (n = 284), respondents owning industrial machinery declare that in general, they check the technical condition of machinery and devices periodically.

Unfortunately, as much as 13% (n = 44) of enterprises “fail the test“ thus formally disregarding the preventive aspect of inspections and examinations, especially in situations when machines and devices work efficiently or their warranty is still valid. It is also interesting that, as study shows, some employers don't know if technical check-ups in the company are done at all. Mostly, these are enterprises employing up to 10 persons.

5.2.2. Documentation Connected with Machinery and Devices

Another area of interest in the study is the documenting of different kinds of activities concerning machinery and devices in the company premises. The first problem is documenting the inspection results, which were mentioned in the previous part of this article. The results are registered and stored, for the use of concerned organs, especially those supervising and controlling working conditions, for the period of 5 years from the date when the inspection is completed. Additionally, “if the machinery is used beyond the company premises, a document confirming the latest inspection of the machine should be available in that place“. As one can see, the problem of management of the assets, as regards the technical condition of machinery and devices, is relatively clearly defined. Therefore, this subject has also been included in the study. The achieved results are presented in table 5.

In the first place, the research shows that only as few as 120 respondents, which constitutes about 36% of the entities owning industrial machinery, have correctly identified the number of years obligatory for archivisation of these kinds of documents. A very valuable information is also that, unfortunately, over one third of the employers (n = 115 34.32% of 335) openly declare they do not know how long the inspection records should be stored.

Table 5. Period of retention for documents concerning check-ups; dominant values

| No. of years | No. of entities | Share % per group of 335 |
|--------------|-----------------|--------------------------|
| 1 | 10 | 2.99% |
| 2 | 10 | 2.99% |
| 3 | 16 | 4.78% |
| 5 | 120 | 35.82% |
| 10 | 30 | 8.96% |
| Don't know | 115 | 34.32% |
| Other | 34 | 10.15% |

Source: own.

A very interesting question is whether the companies gather documentation on the activities concerning technical inspections, renovation and repair of the machinery and devices. A question formulated this way was to, on one hand, show if the companies carry out the mentioned activities, since if there is documentation, most probably at least one of the activities in question has been performed. On the other hand, the fact of documenting the activities testifies to the safety management culture level in the company. When analysing study results, one should note that they coincide with the results obtained in carrying out periodic inspections of industrial machinery. They show that ca. 85% (n = 289) of the organizations which own industrial machinery, perform inspections, renovation or technical devices repair. While making a selection of the data. It was found out that in 284 entities which declare performing periodic inspections, and 289 enterprises which declare to keep the record of machinery inspections, renovation and repair, as many as 260 have given a positive response as regards the two mentioned activities.

Another issue in the study, in the area of documenting various activities connected with industrial machinery and devices, is the question of owning the instructions for use of these machines. Unquestionably, knowledge of proper machine park use, the awareness of threats, emergency situations and many others, has a huge influence on the safety of the employees. The result, in summary, is presented in Table 6.

Table 6. Possessing a documented list of manuals and documented instructions in organizations, among industrial machinery owners

| | Entities which have a documented list of manuals for industrial machinery | | Entities which have documented instructions for industrial machinery | |
|--------------|---|-------------|--|-------------|
| | No. of entities | Share % | No. of entities | Share % |
| No | 130 | 38.8% | 13 | 3.9% |
| Yes | 180 | 53.7% | 318 | 94.9% |
| Don't know | 25 | 7.5% | 4 | 1.2% |
| Total | 335 | 100% | 335 | 100% |

Source: own.

Observing the results, one may see that much as nearly 95% of the respondents (n = 318 of 335) declare possessing documented manuals for industrial machinery and devices, only a little more than a half of them (n = 180 of 335) fully controls the state of documentation, while at the same time admits having a list of manuals. Therefore in many entities the employers do not have manuals for every

work post. While moving on to the question verifying the above issue, which is easy to check by the interviewer and a good measure of management culture in an organization (i.e. the question about the list of manuals), it reveals that, regrettably, the subject of manuals is neglected in organizations, while some of the instructions required are kept only in case of control, not for the employees to use them.

6. Conclusions

The analysis of the study shows that Polish entrepreneurs – regardless of company size – do not fulfill the legal obligations connected with occupational safety and health. The most crucial mistakes are:

- Lack of risk assessment and lack of awareness that it is the necessity (this concerns almost 50% of respondents and 5% of employers who implemented a management system);
- Insufficient adaptation of the machinery to the EU requirements – despite declarations of adaptation the machinery to minimum health and safety requirements, approximately 1/3 of the respondents did not make prior checks and inspections after installing the machine in another place, 15% of them do not make periodic inspections; also inaccurate completing of documentation after checks and instructions for users as well as inappropriate protection of the documents seem to be the problem.

The research shows that companies with a management system, especially health and safety management system, fulfill the legal obligations more often than other companies. The statement that implementation of the system makes the meeting of legal requirements easier seems to be true. Although, as the results show, these organizations have many areas to improve.

It seems that the reason for the current state are: low awareness of the employers' responsibilities connected with providing appropriate working conditions, low priority given to safety and health, financial barriers, complexity of legal provisions related to health and safety, limited access to expert knowledge and experienced professionals [22].

References

- [1] Accidents at work in 2013, Central Statistical Office, Warsaw 2014.
- [2] Act of Law of 30 August 2002 on the conformity assessment system (J. L. 2004, No. 204, pos. 2087 with further modifications).
- [3] Act of Law of 26 June 1997; Labor Code (J. L. 1998, No. 21, pos. 94 with further modifications).

- [4] **Boczkowska K., Niziolek K.:** Diagnosis of consciousness in the area of occupational hygiene and safety in Polish organizations, 3rd International Conference Applied Human Factors and Ergonomic 17-20 July 2010, Miami, Floryda, USA, Taylor & Francis Group, LLC 2010, USA, Savendry/Karwowski.
- [5] **Boczkowska K., Znajmiecka-Sikora M.:** Risk assessment – barriers in EU standards implementation in Polish Enetreprises – Occupational Safety and Hygiene SHO 2015, Guimaraes Portugal 2015, Portuguese Society of Occupational Safety and Hygiene (SPOSHO), pp. 32-34, 2015.
- [6] **Felipe-Blanch J.J., Freijo-Alvarez M., Alfonso P., Sanmiquel-Pera L., VINTRÓ-Sánchez C.:** Occupational Injuries In The Mining Sector (2000-2010). Comparison With The Construction Sector, Felipe-Blancha et al/ *Dyna* Vol. 81 (186), pp. 153-158, August 2014.
- [7] **Jorgensen K.:** A systematic use of information from accidents as a basis of prevention activities. *Safety Science*, 46, pp. 164-175, 2008.
- [8] **Kines P., Spangenberg S. and Dyreborg J.:** Prioritizing occupational injury prevention in the construction industry: injury severity or absence? *Journal of Safety Research*, 38, pp. 53-58, 2007.
- [9] **Mrugalska B., Arezes P.:** Industrial practices designed to ensure safety of machinery, Proceedings book of the International Symposium on Occupational Safety and Hygiene – SHO2013 / Arezes P. [ed.] – Guimaraes, Portugal: Sociedade Portuguesa de Seguranca e Higiene Ocupacionais (SPOSHO), pp. 261-265, 2013.
- [10] OHSAS 18001, Occupational health and safety management systems – Specification 1999.
- [11] Ordinance of the Ministry of Economy of 30 October 2002 on minimal occupational health and safety requirements in the field of the use of machinery by employees during work (J. L. 2002, No. 191, pos. 1596).
- [12] Ordinance of the Minister of Labor and Social Policy of 26 September 1997 on general provisions for safety and health at work (J. L. 2003, No. 169, pos. 1650 with further modifications).
- [13] Ordinance of the Ministry of Economy of 21 October 2008 on basic requirements for machinery (J. L. 2008, No. 199, pos. 1228).
- [14] Ordinance of Minister of Labor and Social Policy of 14 March 2000 on occupational health and safety in manual transport jobs.
- [15] Ordinance of the Minister of Labor and Social Policy of 1 December 1998 on occupational health and safety on posts equipped in screens.
- [16] Ordinance of the Minister of Health of 22 April 2005 on biological factors harmful to health in the working environment, and health protection for employees subject to these factors.
- [17] Ordinance of the Minister of Health of 30 December 2004 on occupational health and safety connected with the presence of the chemical factors.
- [18] Ordinance of the Minister of Health on substances, preparations, carcinogenic and mutagen factors or technological processes in the workplace.
- [19] PN-N 18001: Health and safety management system – Requirements, Polish Committee for Standardization, Warsaw 2007.

- [20] PN-N 18002: PKN 2011 Health and safety management system. Guidelines for risk assessment Polish Committee for Standardization, Warsaw, 2011.
- [21] **Snashall D.:** Occupational health in the construction industry. Scaninavian, Journal of Work, Environment & Health, 31, pp. 5-10, 2005.
- [22] **Znajmiecka-Sikora M., Boczkowska K., Niziolek K., Sikora A.:** Evaluation and Assessment of Adaptation in Lodz Enterprises and among Health and Safety Personnel to the Changes in Regulations and Market Demands, SATORIDRUK Publishing, Lodz, 2010.
- [23] **Znajmiecka-Sikora M.:** Evaluation of the safety culture in the MSIP based on the research among companies from the region of Lodz, [in:] Juźwicka, A., Szymańska K., Walecka A. (eds.) A new look at organizational culture. Monographs TUL, pp. 53-63, 2014.
- [24] **Znajmiecka-Sikora M.:** Analysis of the safety climate on the example of the production company of the lighting industry, [in:] The Organization and Management. Scientific Papers Technical University of Lodz, No. 56, pp. 103-127, 2013.

WDRAŻANIE STANDARDÓW EUROPEJSKICH W OBSZARZE BEZPIECZEŃSTWA I HIGIENY PRACY NA PRZYKŁADZIE POLSKICH PRZEDSIĘBIORSTW

Streszczenie

Celem artykułu jest analiza sposobu wypełniania swoich obowiązków przez polskiego pracodawcę w zakresie zapewnienia bezpiecznych i higienicznych warunków pracy, w tym: norm dotyczących oceny ryzyka i dostosowania maszyn do wymogów prawnych. Badanie zostało przeprowadzone na przykładzie 2000 przedsiębiorców i oparte na wynikach kwestionariusza przygotowanego przez zespół ekspertów. Wyniki dowodzą, że pomimo dostosowania polskiego prawa do standardów UE, polscy pracodawcy wciąż niewłaściwie wypełniają swoje zobowiązania w zakresie bezpieczeństwa i higieny pracy. Co więcej, badania pokazują, że wdrożenie systemu zarządzania BHP wspiera wdrażanie istniejącego prawodawstwa dotyczącego bezpieczeństwa w miejscu pracy.