

MANAGEMENT OF PROTECTION HEALTH AND SAFETY OF WORK RISK IN MAINTENANCE PROCESS

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ABSTRACT

Detailed specification of demands and rules about Occupational Health and Safety Assessment Series - OHSAS 18001 is published 1999. It is a data base for all organization or companies for official certificate about proper planning and protective measures usage. Organization or company have to provide managing of OHSAS. It is very important to consider results of risk evaluation and control effectiveness during defining of objectives in function of safety and health at work. There is a need to exist managing policy about health protection and safety at work, created by top management, with all objectives and obligation about improving of that important issue. Maintenance, in production system as well as all sorts of technical, contracting and other systems, has very important place in OHSAS. Maintenance is multidisciplinary composite of indirect (preparing) and direct (implemented) activity in prediction, avoiding, disposing of machines and equipments failures, all for necessary working ability and optimal level of effectiveness. Special role of maintenance process can be seen in process of risk identification and measuring using OHSAS system.

Keywords: safety, health, evaluation, risk, maintenance, system, management.

1. RISK MANAGEMENT IN OCCUPATIONAL SAFETY AND HEALTH ASSESMENT

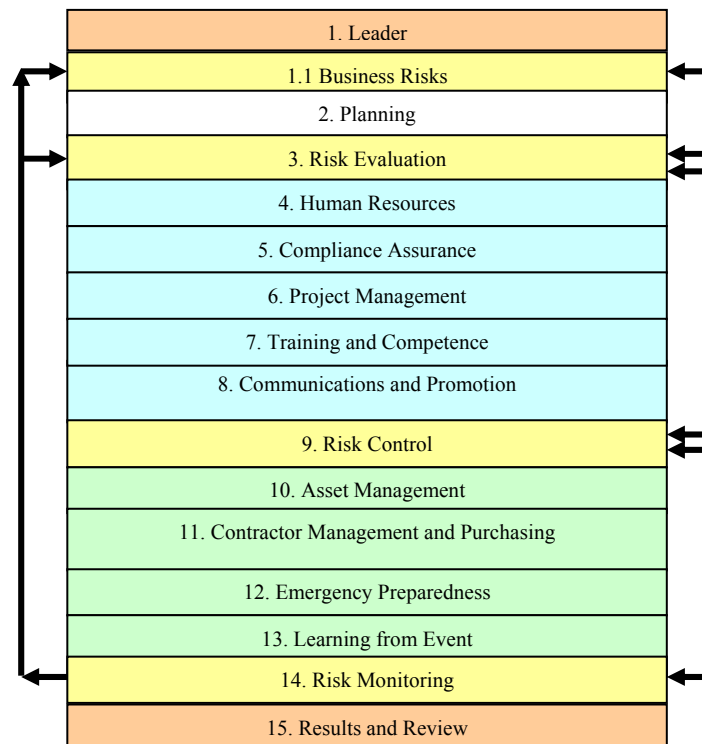


Figure 1. Process model of OHSAS management

Every company and organization should to establish and maintenance procedures for evaluation of failures and risks and monitoring implementation, as a part of a system of **occupational** safety and health assessment. OHSAS contains routinely and none routinely activates of all employees that have access to working place (including visitors of all categories) (fig.1).

2. DIRECTIONS FOR OHSAS SYSTEM MANAGEMENT

Directions for OHSAS make possible control of risks and betterment of all performances of the system. OHSAS never define specific criteria for safety and health protection and never give detailed specification for system manager design [1].OHSAS directions are usable for any organization that need following:

- to establish system management of occupational health and security because of elimination or reducing risk for employers and other who are exposed to risk
- to implement and to maintain permanent improvement of system management
- to confirm pursuing with already defined policy of OHSAS
- to request certification from some extern organization – confirmation of pursuing between its own system and OHSAS specification,

To attain those goals, system management of OHSAS have to except all demands of OHSAS specification. Type of usage depends of OHSAS policy in every single organization, its basic activities, risks and complexity of its operations. Elements of successful OHSAS management that is oriented to the effective implementation of all OHSAS direction is shown on figure 2. [1]

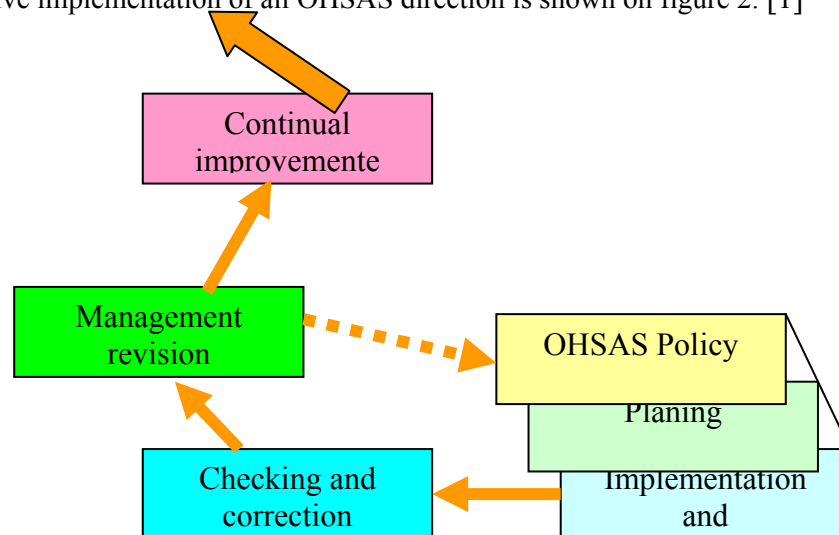


Figure 2. Elements of successful OHSAS management

Every company or organization needs OHSAS policy, designed by top management. That policy clearly recites all OHSAS goals and obligations in process of OHSAS improving. For OHSAS Policy is important:

- pursuing with nature and possibility of risk in company or organization
- to include obligation of permanent improvement
- to include legal demands
- to be documented, implemented and maintained
- to be known to all employees, so they can be aware about their tasks
- to be periodically innovated in keep with development of company or organization

OHSAS 18000 follows Deming's quality circle (fig.3). Supreme goal is continual improvement. This model is pursuing with structure of management system documents, as ISO 14001. Documents pursuing helps in establishing of integrated management system [2].

3. MONITORING, MEASURING AND RISK EVALUATION

Company or organization need to establish and maintain procedures for OHSAS performances monitoring and measuring. Those procedures ensure[3]:

- Quality and quantity of measuring, according to organizations needs.
- Pro-active performances measuring , according to OHSAS management programme, operational criteria and legal and legislative demands
- Re-active performances measuring for scanning of AKCIDENAT, health distribution, including near-misses and other important facts that show insufficiency of OHSAS performances
- Data register and register of monitoring results, that help in further analyses and preventive actions

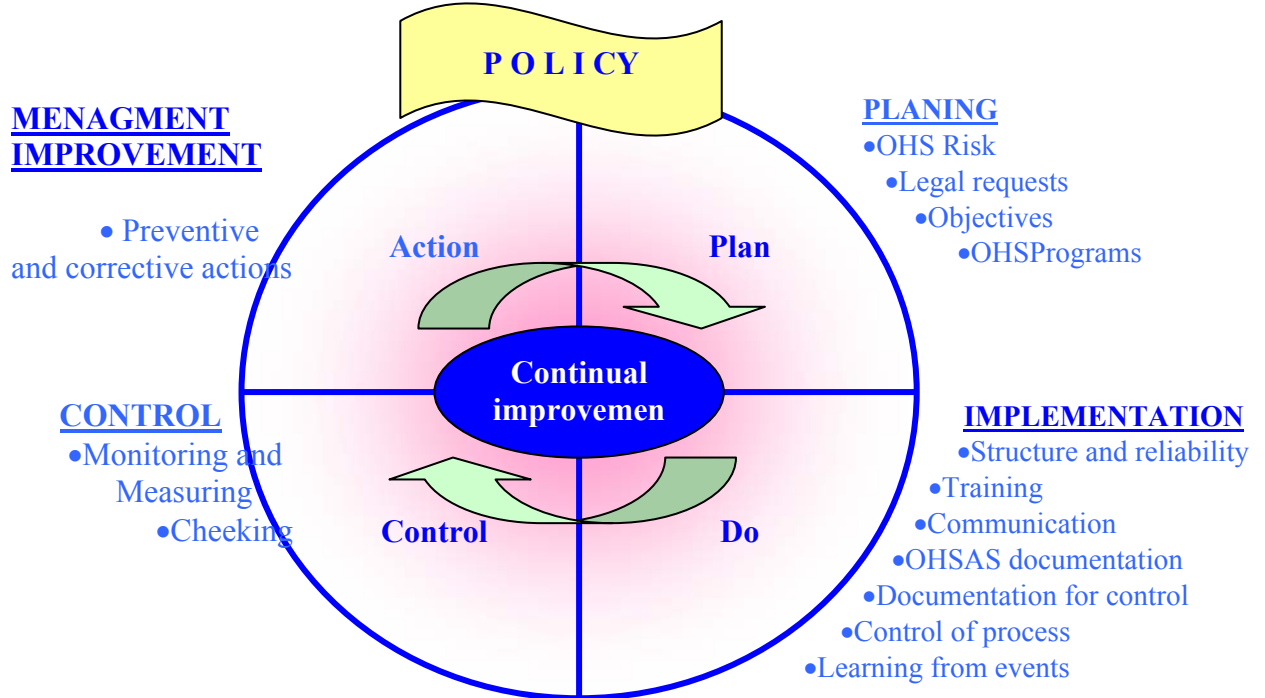


Figure 3. OHSAS in Deming's quality circle

Company or organization should to establish and maintain all procedures for calibration and maintaining of special equipment for monitoring and measuring, if that kind of equipment is necessary.

Register of calibration and activity in process of OHSAS maintenance, as well as its results, should be documented and saved.

Complexity of risk evaluation depends of different factors, like: size and location of company or organization, nature of its business, potential danger and legal demands.

Risk evaluation has few phases of checking [3]:

- in previously defined time period, on the base of accident nature and magnitude of risk
- After any changes in company or organization, staff etc.
- in some special, unusual activates
- after accident or incident

There are some criteria for risk evaluation, based on risk frequency, character and probability. (Table1)

Table 1: Criteria for risk and safety evaluation [3]

Points value→ Parameter↓	1	2	3	4	5
Frequency of event B	Once in a year	Once in a month	Once in a week	Once in a shift	Once in a shift
Character of event C	Just first aid	Medical treatment	Lost time	Partial damages	Death casualties or permanent damages
Probability of event D	Less than once in 20 years	Once in 10-20 years	Possible More than once in 10-20 years	Probably Once in a year	More than once in a year

4. MAINTENANCE IN FUNCTION OF OHSAS

The role of maintenance in OHSAS system management is very important, especially in process of identification and evaluation of risk. (Table 2).

It is expected, if we consider maintenance function and influence on different aspects of environmental protection. That influence can be greater or less, depending of maintenance role, as a logistic support or a main production process in company.

EMS system management is very similar to OHSAS system management. Both systems deal with identification and analyses of all aspects of risk, monitoring and evaluation of risk and prevention. Similarity is obvious in development process, from goals and policy to implementation, usage and permanent improving.

Table 2: Exemplar evaluation of risk in maintenance [4]

Job description - area, - equipment - objects	Danger	RISK BEFORE CONTROLE					RISK AFTER INITIAL CONTROLE					
		HUMAN FACTOR A	FRECVENCY B	CHARACTER C	PROBABILITY D	RISK AxBxCxD	INITIAL CONTROLE AND EDUCATIONAL MEASURS FOR REDUCING OF RISK	HUMAN FACTOR A	FRECVENCY B	CHARACTER C	PROBABILITY D	RISK AxBxCxD
Work with hand tools	Physical injuries	2	3	3	3	54	Training, procedures	2	2	2	3	24
Installation, work and maintenance of mechanical equipment and system.	Injuries from rotation elements	1	3	3	4	36	Procedures awareness about safety	1	3	3	3	27
"	Excessive noise	4	5	4	4	320	Monitoring, training, protecting head phone	4	4	3	3	144
"	Electrician cable	1	5	5	2	50	Procedures, training, working, awareness about safety	1	5	5	1	25
"	Drops by platforms	1	3	5	3	45	Planning of work, protection from drop, awareness about safety	1	3	5	2	30
"	Poisoning from incorrect installation	2	5	5	2	100	Training, measuring, Ventilation of sistema.	2	5	5	1	50
EVALUATION OF RISK	INSIGNIFICANT 0-20	ACCEPTABLE 21 - 40			REASONABLE 41 - 60		IMPORTANT 61 - 80		UNACCEPTABLE >81			

5. CONCLUSIONS

- OHSAS directives for system management ensure that company or organization have control of risks and to improve performances.
- Methodology for destructiveness identification and risk evaluation has to be defined in keep with operational experience and ability for measuring and risk control. Methodology contains monitoring of all activities, efficiency and implementation.
- Sociological goals of maintenance (psychological stability of employees, motivation for work in secure systems) and ecological factor (environmental protection) directly show special role of maintenance in OHSAS management.

6. REFERENCES

- [1] SAFETY MANAGEMENT SYSTEMS AND OHSAS 18001, ASSE, MANAGING, December, 2004.
- [2] Gmur, N. (gmur@bnl.gov), NSLS OHSAS Management System Manual, LS-ESH-0041, Revision Log, 13.10.2005.
- [3] Bulatović, M., FUNCTION MAINTENANACE OF PROCESSES IN ENVIRONMENT MANAGEMENT SYSTEMS, World Day of Quality, Poslovna politika, Journal QUALITY, Belgrade,2003