Risk identification as a precaution in Kosovo Energy Corporation

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Abstract

Each time, the disasters of various factors are associated with risks for employees and welfare impacts of business processes, causing financial and economic loss, destruction of social infrastructure, economic infrastructure and working spaces. In this analysis, firstly are identified the sources and causes of injuries. In this paper we applied the experimental method, normative, historical comparison, case study, etc. screening methods. All phases of the technological process and operating unit of KEK ranging from digging measures overburden extraction of coal and electricity generation are technology processes very complex and burdened with difficulties of various technical and organizational. The purpose of this research is based on the identification and analysis of key performance indicators of the process of protecting the health, safety and environmental protection in KEK.
In accordance with the intended purpose, the task of this research is: Analysis and demonstration of basic concepts in the fields of management of occupational health, safety and environmental protection, analysis and demonstration of the basic concept in key performance areas. Research methods provide the way of the goal of solving the problems. Based on the identified problems, dagger set goals and tasks of scientific research, through the choice of the appropriate scientific methods.

Keywords: teen, analysis, risk, prevention, Security.

Introduction

Each stage of the process is obliged to respect the rules-rates determined by the manufacturer as well as norms and modern techniques of risk assessment and safety system accident investigation. In scientific terms this is an energy science and technical exploitation of energy resources. In economic terms is an overview of the energy and economic activities directed towards research and production of primary and secondary sources of energy, transformation and transmission and distribution to consumers. In terms of the safety of workers is a conglomerate of problems as a result of not maintaining the energetic and investment system for a long period of time.
Thus the analysis is on factors of vulnerability in certain stages of the process. Technical and technological development can conclude that the application of quality control with the aim of taking preventive measures in the process of implementing safety in workplaces is a daily and necessity of permanent for all management staff and technical managerial and supervisory staff. Assessing the degree of risk and prevention as a measure of safety for the European Union is regulated since 1989

under Regulation 89/391 / EEC. According to it monitoring, surveillance security system in KEK is an integral part of the organization to work in manufacturing as well as in maintenance. Identification procedure and pest risk and impact assessment is reached:

- Identify all hazards and pests that can have an impact on the mining and generation;
- Survey indication of the danger and damage in the production and maintenance;
- Determine system of any risk assessment and hazard of mining operations and technical and technological processes in the TC.

Analysis parameters evaluated numerically, and finally the risk assessment in the workplace and the working environment is expressed in numerical order. Besides these technical and technological problems, stress at work is one of the main causes of accidents and incidents in the workplace and occupational diseases and other diseases that are associated with workplace productivity, poor and errors in the work, which results in absence from work / sick leave /, major changes in staff leadership, poor performance and the added opportunity of accidents due to human error. Experience has shown that the interference of individual or institutional factors may affect the mitigation of the effects of stress and prevent it.

From this comes the need of its management, and its minimization, minimizing the factors that cause it. The essence of occupational health psychology is the "stress" and their concern, belongs to the effective management of stress at work.

Risk prevention method in the workplace

Through the application of modern control and inspection in each of the wards - technical and technological processes carried out periodic checks (scheduled inspections) research, analysis of the task and procedures, observations, data security, data identifying preventive in property damage etc. The basic parameters of this method are a function of risk assessment in the workplace and working environment. This method is based on the implementation of activities such as:

a. Set all potential hazards and pests who and / or may occur in the process causes the advancing technological parameters of the work front;
b. Determination of the possible causes of the appearance of all the risks and other pests and microclimatic.

Labor protection is an integral part of the organization of work and the realization of a working process which is realized by the application of rules written by: Rules for occupational safety, health and working environment; Fire protection regulation; Regulation for training of employees for safe work; Rules for the use of personal devices at work; Regulation for ionizing and non-ionizing radiation; Emergency Plan and the KEK.

The management of security in EQF is based on the principle of "contemporary business and which requires: knowledge (70%), materials (20%) and equity (10%)", the recognition of risk, types of injuries, illnesses professional and related diseases in the workplace, and the consequences for the employee working ability are documents relied foundation of legislation for the protection of worker health. For risk assessment was necessary measures to identify the factors in order to provide reliable data that

reflect the relationship between the demand for health personnel, safety regulations, health and working environment, which is associated with major accidents with risk of fatality (Shehu, 2014). With the process of risk assessment taking into account the law governing this issue and maintaining safety equipment and staff then it must be built from several stages of management:

- Identification of opportunities;
- Risk assessment;
- Control of risk;
- Implementation of measures for enforcement.

Dangerous processes should be noted, should be confined to a minimum to reduce or even eliminate, the more that create conditions for safe and productive work. Risk assessment is a methodology which establishes the degree of risk and the size of injury, occupational diseases, and all other related diseases in the process of working and which are affecting the lives and health of employees.

Risk analysis

Risk assessment includes activities where the risk prevention and control and to foresee adequate measures applicable to multidimensional approach to this problem. Based on data collected through this study will identify, analyze risks and negative effects and the list of specified risk in the environment and in every place of work, selecting and applying appropriate methods of risk assessment made and the likelihood impairment in working disease (professional) or disease to employees.

Following the identification of problems and analysis, to determine "the list of the words" for the analysis of jobs, with a significant increase in the level of risk of this particularly will come to harm from noise and other hazards in power stations and we substations. After completing the analysis of all the action steps of jobs, access to risk assessment of accidents and incidents in the workplace, through the reporting of accidents reported and Analysis and KOSTT benefit to the losses as a result of accidents in the country working for the period 2005-2016.

Analysis of problem solving should focus on three basic areas:

- Security factor;
- Economic factor;
- Time factor.

The first step and the most important action in the security management program is the identification of all possible causes for accidents of workers at KEK. This is the only safe way to know and identify all the possible causes of risk that can lead to large and catastrophic losses if not controlled properly. Through the application of modern control and inspection in each technical and technological processes, periodic checks (scheduled inspections), analysis of the task and procedures, observations, data security, data identifying preventive in property damage etc. the employees must be informed about changes that lie ahead or the reason for the change as good for themselves.

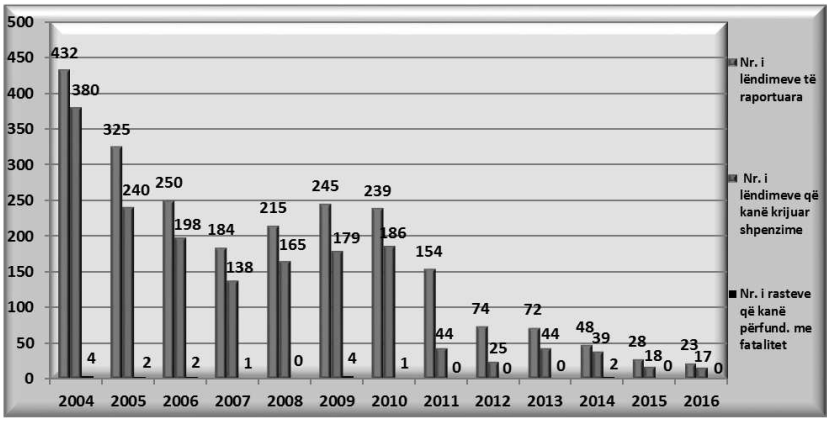
Photo no. 1. Folding the internal J.P. mine Siboc.

This analysis refers to data on the number of injuries reported and the number of injuries that create loss.

Tab. No.1. The number of injuries reported the number of injuries that create waste and the number of fatal cases from 2004 to 2016.

VITET	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nr. Injuries reported	432	325	250	184	215	245	239	154	74	72	48	28	23
Nr. The injuries that have created costs	380	240	198	138	165	179	186	44	25	44	39	18	17
Nr. The cases that have underneath. Fatality	4	2	2	1	0	4	1	0	0	0	2	0	0

Diagram No.1. Accident reported and accidents that carry with them the cost of financial expenses from 2004 to 2016.



Identification of the security problems

Security Management Program is implemented between forms of action to clear, after identification of the cause and source of accidents and incidents, such as:

a. Method of Reporting;
b. Analysis method and the cost of losses.

Energy is the task of economic output and reducing energy losses, efficient deployment of manufacturers and selecting the optimal mode of transport. In addition there is also another important task, reducing the negative actions on the human environment, namely the reduction of emissions that are a consequence of the greenhouse effect. Economic development requires not only a sufficient amount of energy, but also a special structure which should be responsible for the level of technological development, economic guidance, specific comfort and environmental requirements. Electro-Energy System of Kosovo aims at achieve effective management of existing energy resources and environmental protection on the one hand and the protection of workers from accidents and incidents on the other side.

It focuses on enhancing security of supply during the work with the equipment and facilities by applying European standards of labor and equipment operation and diversification of energy sources. This system aims to stimulate the rational use of energy and increasing the efficiency of its use, the use of renewable energy, introducing new technologies that do not harm irreparably the environment, greater security personnel during the operation and technical maintenance of these technological processes while respecting the application of labour protection standards and internationally accepted environmental standards. Almost the entire electricity sector in Kosovo is based on electricity produced by burning coal (power plant).

Technical installed capacity of the two power plants, despite their age from 24-46 Years, will be able to meet consumer demand for basic electricity, but for due to degradation and underinvestment in the sector of coal and the power plants in Kosovo during 1990-1999, deficient maintenance and rehabilitation not necessary and timely technical availability and performance of generating units, despite the continued increase registered and are under the parameters of installed.

Kosovo has the possibility to achieve this standard by creating interactive lines 400MW or better to say the creation of the main pipe in the two states along with Albania, which produces electricity from water systems or powerless ecological and Kosovo, which 97% of the production of electricity It has the potential coal-combustion generation and 3% by hydropower. Construction of the high tower is nearing completion and we thought that up to 2016 pound will be introduced that will facilitated the supply of electricity to the two countries. Winter period or rainfall in Kosovo and Albania supplies with required quantities of water.

Also, lack of energy, uncertainty of energy supply, and lack or inadequate critical infrastructure, can directly promote the reduction of defence forces, in order to combat forces, transport, command and communications, logistics etc. come in aid to civil forces for their needs in cases of natural disasters, extreme conditions for life and work or in various medical cases.

New relationships influenced by European integration necessitate revision of national energy strategies and dilemmas for the possibility of independence for supplying energy, the state's role in the current and long-term electrical energy, and the relationship between energy infrastructure (a segment of critical infrastructure) and national security.

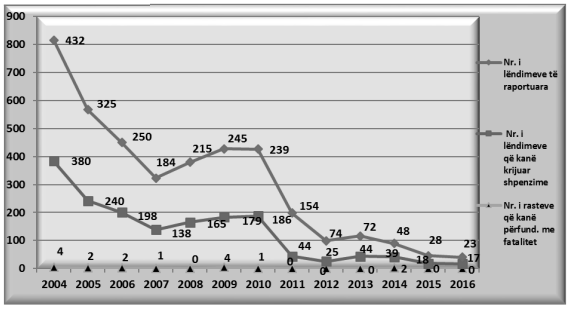
In terms of liberalization of the energy production and distribution, security of energy fuels production facilities privatized, can no longer be guaranteed only by the public sector, exclusively at the expense of the central government. Therefore the problem of internal security of legal entities that deals with the production and distribution of energy as well as the issue of providing the carrying parts of the power system, opening new problems in relations between the public and private sector.

Determination of critical points in the system, planning of production capacities position either for power plants for small sources, may prove economical solution to account. Achieving optimum results in the use of limited resources presents a major challenge.

This is important in terms of building management and energy sector, as well as in the field of preparations for action after losing part or in whole to the power supply. More important is the union of ownership and responsibility for risk, to ensure raising the level of security in the Energy Sector due to the introduction of significant market principles.

Between the module for reporting all cases of reported accidents and incidents without taking into account cost- benefit to the losses in working hours or the cost of expenses - financial cases or cases of accidents at work.

Graphic No.1 reports injuries, causes of them and costs of cases that have completed fatality at the period 2004-2016.



Tab. No. 2. The cost of expenses as a result of injuries from 2005 to 2016.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Expense in € as a result of injuries at work	136736.8	172,524.8	177,914.3	173,312.0	241,037.6	210,075.6	154,549.1	142,772.7	57,338.4	56,270.0	50,574.8	40,437.13

Chart No.2. The cost of expenses as a result of injuries 2005-2016.

Identification and security problems of work environment in priority particular KEK

Today in the world, production, supply and consumption of energy resources and services is associated with pollutant emissions and imitation in air, soil and water, causing damage to the environment that affect the health and wellbeing of flora and fauna. As noted earlier, global concerns about climate change have focused particularly on emissions of carbon dioxide (CO2) and other gases that cause the greenhouse effect (GHG) in the atmosphere. Burning fossil fuels has historically been, and continues to be the leading cause greater concentration of GHG in the atmosphere.

They are relatively abundant and cheap in comparison with other fossil fuels, in many countries for electricity generation coal typically used. All aspects of its use are devastating for the environment. First, its coal mining is highly polluting activity, which is harmful for human health. Surface exposure during mining operations, together with the remnants of coal, over time can lead to sediment and toxin production, which drained into nearby rivers and land.

This development is potentially destructive to human settlements, as well as the habitats of animals and plants, which can contaminate water supplies and food products. Prolonged exposure and inhalation of dust resulting from operations mines is dangerous for those living and working near the mines, and it causes a large number of cases of lung disease locally. Therefore the terrestrial globe occurring processes that are associated with the release of gases naturally in the atmosphere and absorption of oxygen and gases to be entering in the composition of the atmosphere, all in the nature preserve the stability of the compound air Burning coal produces significant quantities most of CO_2, nitrogen oxides and sulphur oxides than other sources. In addition to contributing to the growth of GHG concentrations, nitrogen oxides and sulphur mixed with the humidity of the atmosphere and produce sulfuric and nitric acid in the air (Shehu, 2014).

This phenomenon, which is often referred to as "acid rain", can degrade the forest and water resources and their world of flora and fauna, even at great distances from the initial source of the pollution. Burning coal also produces other particles that can be

transmitted through the air with hundreds of kilometres away.
Other pollution caused by electricity production includes thermal water pollution. This occurs when water used for cooling the power plants then flows into local water streams, thus increasing the water temperature to levels that harm fish and other aquatic organisms. Environmental and social legacy was heavy, while demand for electricity continued to increase greatly.
After the liberation of Kosovo, KEK passed through several stages of restructuring and organizational changes and operational separation of full and after the privatization of the Company's distribution and supply of electricity, which eventually took place in May 2013.
As a result of current operating activities in KEK we have:
- Air pollution, mainly as a result of emissions from TC-et-air, excavation and transportation of coal etc;
- Pollution of water-as a result of technological wastewater discharges and wastewater collection in the mine;
- Land- degradation as a result of surface mining activities around the mining area.

The main environmental impacts in general the opencast mines of Coal, and now after the transfer of large amounts of ash on the floor pit mine that empty, are: During the production of coal in the mines have to do with digging large scale materials by used heavy equipment. This excavation, during which we use mineral resources, causes inevitable negative impact on the environment, such as wide area of land occupied by mines and waste receptacles.
Change of flora and fauna in the area surrounding the mine due to the construction and operational activities. Potential contamination of ground and surface water pollution (affecting the formation of a large watershed) due to changes in land and processing of coal (ash deposits, waters mining and processing downloaded). The total loss of the existing habitats occupied land. Change hydro-geological regime in a wide area. Air pollution from dust during excavation of overburden and coal formations, as well as transportation to the generation, impacts on the stability of terrain and steep slopes deformation areas (landslides) in mine J.P. the Sibovc.
As in other areas, as well as in the field of waste management, Kosovo has inherited a difficult situation. Besides the large quantities of waste disposed of for years, it was met with a generation period of their very high. KEK has also inherited significant amounts of waste and hazardous substances which were cast without any planning (as waste technological processes of the period of time Socialist) and stored at industrial facilities in the vicinity of TC Kosovo ,, A ,,. KEK has begun even in better management of waste, but should advance further. Wastes in large quantities are coal combustion products. Ash produced from the combustion process in boilers as a precipitant and ash flying. Volume production depends mainly on the content of non-combustible materials (usually inorganic substances) in coal. The current rate of non-combustible materials in coal is about 30 (%). In both plants Kosovo A and B are built dumps it (the empty places of mine Mirash) for laying - transfer (transportation) hydraulically ash (fly ash and fly ash precipitant). Ash sediments appear as tiny sand until particles (particles) in the fly ash are typically between 30 (μ) and 5 (μ).
Kosovo B has set analyzers for measuring the emission of gases and dust. Emissions

of pollutants in the atmosphere are higher than the permitted values of the border because of designs, design precipitation electrostatic, then the non-existence of plants for reduction of pollutants such as NOx and SO2, high content of substances inorganic coal and other problems in the process combustion. TC Kosovo in A3, A4 and A5 measured particulate emissions, and emissions of polluting gases are calculated.

After installation of new electrostatic precipitation at Kosovo ,, A ,, and design that provides operation with particulate emissions below the prescribed criteria we can conclude that this plant has become a significant environmental improvement, installation of electrostatic precipitation in operational units TC Kosovo "A". Install new precipitators ensure that the emission of particles to be in the prescribed criteria. In Kosovo A project is realized hydraulic transmission of ash from Kosovo A in hollows coal mining liabilities.

Based on data collected, are identified, the risks and negative effects and the list of specified risk in the environment and in every place of work, selecting and applying appropriate methods of risk assessment made and the likelihood of damage in disease work or disease of employees (Shehu, 2014).

In the first level of analysis is completed to identify and analyses the source and cause of injuries. After this analysis, to determine the "check list" for the analysis of jobs, with a significant increase in the level of risk of this particularly comes to damage from noise and other hazards.

Among others we have applied the method: Experimental, normative, historical comparison, case study, etc. screening methods. Always, disasters of various factors are associated with risks for employees and welfare impacts of business processes, causing financial and economic loss, destruction of social infrastructure, economic infrastructure and workspaces.

All phases of the technological process and operating unit of KEK ranging from digging measures overburden extraction of coal and generating electricity to the transmission and distribution electricity, are processes with a technology very complex and charged with difficulties of various technical and organizational.

Analysis parameters are evaluated numerically, and the risk assessment in the workplace and the working environment is expressed in numerical order. Besides these problems, technical and technological Stress at work is one of the main causes of accidents and incidents in the workplace and occupational diseases and other diseases that are associated with workplace productivity, poor and errors in the work, which results in absence from work.

The basic parameters of this method are a function of risk assessment in the workplace and working environment. This method is based on the implementation of activities such as:

a. Set all potential hazards and pests who and/or may appear as causes of the technological process parameters advancement of work in front of mine;
b. Determination of the possible causes of the appearance of all risks and microclimatic and other pests (Shehu, 2014).

Protection programs and risk management

We must analyses the factors that cause risks to employees' health (the cause and source thereof). If it is due to the failure to implement the measures and norms established by the law, regulations, standards, guidelines, etc. can effectively eliminate those factors that create a risk, then you will be in "action" for specify and determine the short term to take appropriate measures that will eliminate the risk. In other cases, the risks identified as risks identified in the latest set of elaborate including jobs and the number of staff. Determination of research objectives, ambient district working groups in charge of personnel work in the building or around the work. Management staff and the employer inform and define the scope of performance and progress through the advancement of priority:

The first priority:

a. Discover the risks. Dealing with public buildings and workplaces as lighting, heating, traffic routes and escape, fire protection etc.

Second priority:

b. Detect workflows, work pieces, tools, work environment and determine the degree of risk.

Third priority:

c. Work tools. To test the functionality of systems, tools or protective equipment to work.

Protective objectives determined by comparative evaluation of the condition of safe use of risk management is a structured approach to managing uncertainty related to the threat, which appear as a result of its losses in people and material goods. Therefore, such a management approach must be a sequence of human activities including; risk assessment, developing strategies to manage and reduce risk using managerial resources and the establishment of adequate systems - contemporary. The main objective should always have identification, treatment and reduction of the risk of interests related to the default of the required levels of society. You should always refer to a large number of types of threats caused by the working environment, technology, organization of work and security policies.

Threat assessment for facilities and infrastructure (virtual) power must contain:

- Explanation of the importance of the facility;
- Key elements of threat;
- Types and causes of threat;
- Assessment of adverse consequences and the final classification.

Risk prevention and assessment of the degree of threat to the European Union is doing duty since 1989 under Regulation 89/391/ EEC, which has taken place through the implementation of a security program in order to create conditions and standards and methods that work. Monitoring, security surveillance system in KEK is an integral part of the organization works in operation as well as in maintenance. The risk identification procedure and pests as well as the environmental impact assessment are reached:

1. Identify all hazards and pests that may have an impact on the Distribution and Supply Division;

2. Survey indication of the danger and damage in operation and maintenance of the system;
3. Determine each system of assessment and pest risk of technical and technological operations and processes.

This process should be based on preventive actions, so that the activity of works not be interrupted, to avoid risks for personnel working in the area, the cost of operations subsidiary shall be more small but this reduce the labor costs that arise as result of additional activities into operation.

Conclusions

Basic safety principles in the system of electricity generation in Kosovo must be:

- Qualitative selection of persons for carrying;
- mental health and ability of personnel;
- The availability of guidelines and standards for carrying;
- availability of adequate personal protective equipment;
- ensuring compliance with the requirements for safe;
- Provide for clarity and understanding of the requirements laid down;
- Selection of safety management program in KEK.

Technical characteristics of equipment and facilities as well as working machines and a variety of workspaces, starting from the exploitation of the masses of alluvial overburden and coal transportation to power plants and detached complexity of works of operation of the production and maintenance of the electricity system Kosovo, taking into account the potential risks due to the depreciation and consumption of their age, to ensure the performance of the works so as successful and safe as required equal application forms legislated. The statement of the special requirements of legislated labor forms issued to the nature of the technology works and additions needed to work in the plant and energy facilities to work more safely by methods legislated.

The significant need for rehabilitation, expansion, adaptation and application of standards in the system of generation assets is very clear. The rehabilitation and re-constructing an number of assets if the excavator or part of the technology generation, will improve the quality of work that sure and thus increase capacity of production t/coal or MW/h, power, complementing standards the technical parameters, will reduce technical losses, improve occupational safety, will develop and modernize the network and power system as a whole.

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