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Risk of Work Place in the Context of Environmental Policies

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Abstract: The main elements of environmental security assessment in an investment shall be determined taking into account the effects on health, safety of the workplace and the environment. It is necessary to collect a larger number of information in particular concerning the conditions for the use of various chemical agents. It is necessary to make a deep analysis of work place, to see what the types of chemical substance and materials are used frequency in industry that can infest the environment and it must to know how much damage can produce all of these materials. When we know the risks that characterize equipment, we can protect the life and we can protect the environment for a sustainable development.

Keywords: safety investment; risk strategies assessment

1. Introduction

When it is developed an industry investment it is necessary to highlight the elements of environmental security to comparing different kind of risks and to make an analysis of all risk factors by using adequate weightings. Modifying factor – a constant used in developing a minimal risk level to reflect an uncertain in data that is not accounted for the uncertain factor.

It must to make a prospective study, where the information about the exposure and response are obtained after the study has begun.

2. Paper Objectives

The main objectives are to establish the global security risk level and the safety measures that are necessary to take by the units.

Risk means the probability of an adverse effect the results of a particular exposure. Risk Factor can be variable in a casual model that is related to a vast response. That variable may act with other factors or in some other way (multiplications).

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3. Identified Risk Factors

The risk factors are identified like:

a) Risk factors of input

▶ Mechanic risk factors

F.1. workers that movement on the access roads inside the unit by means of transport (supply, delegate, service providers etc.);

F.2. bumping, or crushing grip in traffic accident at the movement in the interests of the service (for action);

F.3. defect-parts and mechanisms, the deviation from the normal trajectory of movement, impact, overthrow.

▶ Electric risk factors

F.4. electrocution by direct accidental unprotected pathways voltage at the venue of the activity: plugs damaged makeshift cables stripped portion, makeshift electrical connections etc.

b) Risk factors while the work

▶ Physical factors

F.5. alternate of the winter temperature;

F.6. currents of air corridors or rooms, or the simultaneous opening of doors and windows;

F.7. drop at the same level, through the slip, due to the condition of the roadway, the climate conditions (ice), wet floors etc.

▶ Biological factors

F.8. contamination caused by the presence of patients carriers of viruses, bacteria etc.

F.9. wrong actions and moving, staying in hazardous areas, in the vicinity of access roads, roadway in access of the gauge;

F.10. skip taking measures to prevent traffic accidents at pedestrian movement (insurance, diminished, crossing through illegal places, meaning failure indicators etc.);

F.11. psychic due to this solicitation of patients, relatives, media.

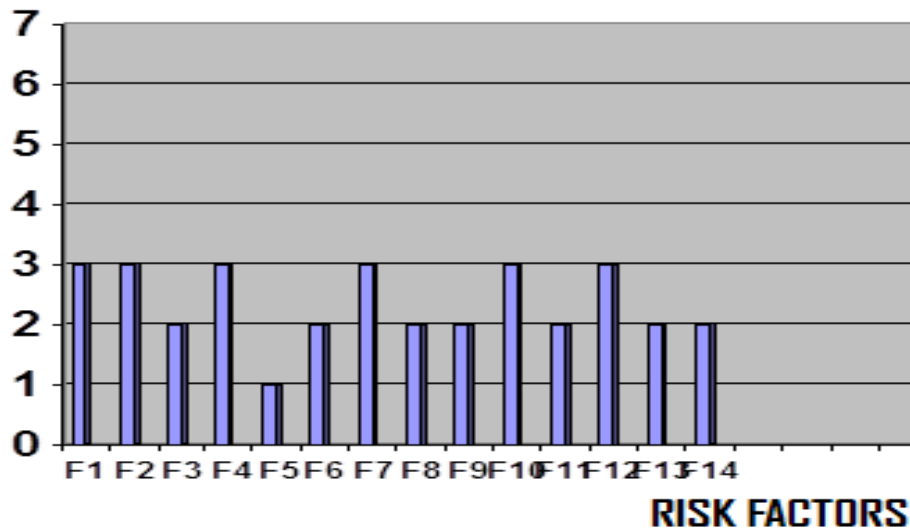
Risk levels

Figure 1. Diagram of risk levels on risk factors (Ricci, 2010)

4. Calculus of Global Risk Level

For calculus of global risk level is necessary to analysed the diagram of risk factors, where is showing the most dangerous factors for human activity in an industrial activity,taking into account the effects on health, safety of the workplace and the environment.

Risk Ratio – the ratio fond by the responses in which those with the risk factors are related to those without that risk factor. If the ratio is greater than 1 the risk factor increased the risk to those exposed to it. (Ricci, 2010)

In conformity with the diagram of risk level (figure no.1) we must to choice the risk factors that have the greatest risk level and to use the formulas (1) for this calculus.

In the next is showing the explicitly of each of each risk factor that existing in figure no.1. like:

F.1. Pedestrian movement on the impact or access roads inside the unit by means of transport (supply, delegate, service providers etc.);

F.2. Bumping, or crushing grip in traffic accident at the movement in the interests of the service (for action);

F.3. Defect-parts and mechanisms, the deviation from the normal trajectory of movement, impact, overthrow;

F.4. Electrocution by direct accidental unprotected pathways voltage at the venue of the activity: plugs damaged makeshift cables stripped portion, makeshift electrical connections etc.

F.5. Alternate interior exterior temperature winter;

F.6. Currents of air corridors or rooms, or the simultaneous opening of doors and windows;

F.7. Drop at the same level, through the slip, due to the condition of the roadway, the climate conditions (ice), wet floors, etc.

F.8. Contamination caused by the presence of patients carriers of viruses, bacteria, etc.

F.9. Moving, staying in hazardous areas, in the vicinity of access roads, roadway in access of the gauge;

F.10. Skip taking measures to prevent traffic accidents at pedestrian movement (insurance, diminished, crossing through illegal places, meaning failure indicators, etc.);

F.11. Psychic due to this solicitation of patients, relatives, media;

F.12. Failure to take measures to restricted the pedestrian traffic for avoid the accidents (insurance, diminish the attention, crossing the forbidden places, Failing signs, etc.);

F.13. Due to this mental request of patients, relatives, media;

F.14. Stress caused by the intense pace of work, quick decisions in a short time and negotiation.

We use a formula that is used to calculus of Global risk level.

Global risk level - N_{rg} (Bedford & Cooke, 2003):

$$N_{rg} = \frac{\sum_{i=1}^{14} r_i \cdot R_i}{\sum_{i=1}^{14} r_i} = \frac{6(3 \times 3) + 7(2 \times 2) + 1(1 \times 1)}{6 \times 3 + 7 \times 2 + 1 \times 1} = 2.51 \quad (1)$$

Safety measures proposed are the followings:

- workers movement on the access roads inside the unit by means of transport (supply, delegate, service providers etc.) must be made in maximum safety;
- speed control vehicle access inside the unit by placing limit signs at the entrance to the establishment;
- restrict access of vehicles depending on unit needs.

Like organizational measures we can take the next measures:

- training of workers on safety consequences of failure to movement restrictions inside the unit;
- preparation of instructions/procedures on the conduct domestic workers (general obligations, and pedestrian travel by car etc);
- an adequate protected pathways voltage at the venue of the activity: plugs damaged makeshift cables stripped portion, makeshift electrical connections;
- maintaining electrical work equipment by specialized and authorized personnel;
- daily visual check of the integrity of the casing cord electrical work equipment, the condition of the outer casing and power plug;
- the use of extension cords provided with protective null;
- supply of equipment for electrical work and will be only effectuated with extension cords from outlet provided with protective null;
- avoid the crossing through illegal places, meaning failure indicators etc.);
- it must to respect rules of the road while moving on road traffic routes and verified with road traffic regulations.

Like measures it must to proceed at thematic training plan will include provisions of law, marking the traffic section.

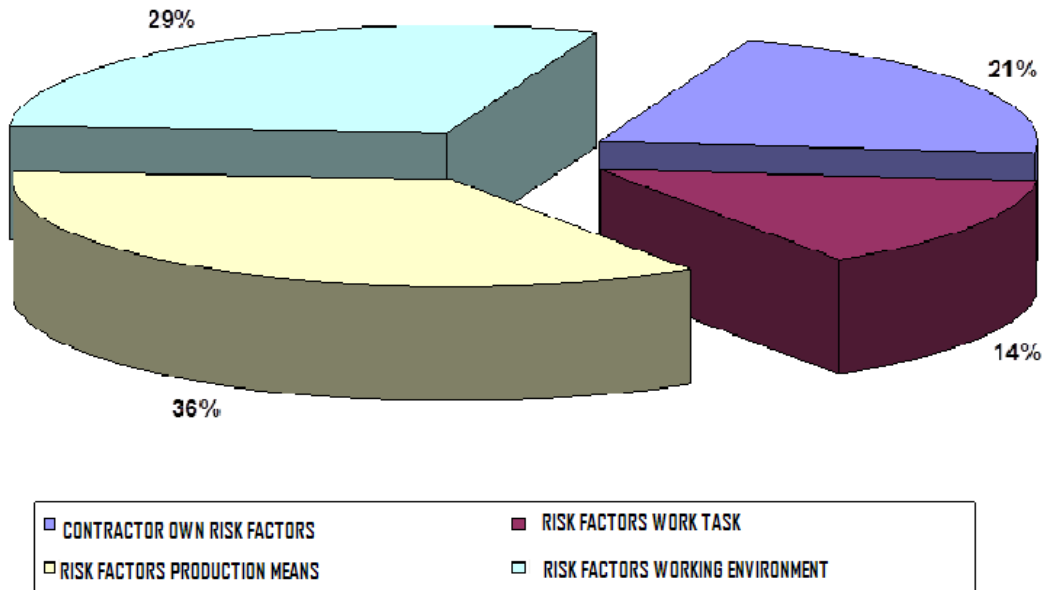


Figure 2. Risk factors identified by source generated (<http://leafmarque.com/resources/000/690/511/>)

This diagram shows that a high percentage of 36% represents the risk caused by production means. In this case the manager must to bring in his factory the production means that ensure the maximum protection for the workers. The second percent of 29% represent risk factor working environment and also identify those features that will must take in consideration when is make the analysis. The prioritization of risks is made for an efficient allocation of investment resources.

It observe that the next risk “contractor own risk factors “of 21%, transfer the work tasks and the work risks to the worker and that is not normal. We also see that workloads with 14% risk factors are not acceptable in a modern factory, with new and productive equipment that must to ensure a high security degree viewing the work risk.

5. Conclusions

Can say about the performance of risk management measures, if we know the pollutant substance and how to neutralization.

Risk screening tools may also adopt qualitative reasoning, belief nets or qualitative systems tools to explore the interaction between hazards and receptors.

Usually, screening assessments are designed to be precautionary in that, where uncertainty remains about the probability and consequences of harm, risks are escalated to the next tier of analysis as a precaution. (Dragomir & Dragomir, 2014)

Participatory risk assessment has been recognized as a valuable method to support public engagement.

In planning a risk assessment in an industrial investment it is must take in account that:

- employment and the public’s views can be taken into account in the decision;

- the futures employment may know what means the risks because a lot of them maybe work in another plant and they take contact with security risks and know about minimal risk level;
- in an investment shall be determined to taking into account the effects on health, safety of the workplace and the environment.

Relating to the specificity risk of an industrial investment, it is necessary to prepare a management scheme and a bunch of decision that must be create discussion with groups of futures employees.

In the case of an industrial investment, because are large number of possible combinations of hazardous agents, exposure pathways and receptors that could be affected, these methods can be expensive and necessity time and money.

The study considered that the main risks are guilt for damage that can produce inside of a factory, viewing the workers, the equipment, the productivity and the type of product made. When we must to develop an investment it must to take in account, first of all the work security of the workers, risk of production means, risk factors working environment, contractor own risk factor and risk factors work tasks.

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