Application of Safety and Health Management Systems Approach to Workplace Ergonomics

Name

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**Exercise 1: Relating Countermeasure Strategies**

Certainly, the transfer of energy from one state to another has the potential to cause harmful injuries to people and also lead to the destruction of property. For that reason, Haddon proposed ten countermeasure strategies in the attempt to control, eliminate and mitigate any disastrous effects of energy transfer. For instance, there are various sources of energy that have potentials to cause damage including hurricanes, earthquakes, lightning, and moving vehicles amongst other. Fundamentally, this section focuses on addressing the ten generic countermeasure strategies proposed by Haddon and illustrating how they relate to incidents that occur in the workplaces.

The first countermeasure strategy involves preventing the initial buildup of energy. In particular, the strategy involves preventing marshalling and further generation of forms of energies including the electrical, kinetic or thermal energy amongst other (Haddon, 1995). For instance, the worksites must install electrical regulators to regulate the electrical energy used by workers to operate machines and office equipment. In such cases, the electrical regulators prevent the initial buildup of electrical energy that may cause damage to property and injure the employees.

The second countermeasure strategy involves reducing potential energy. Haddon (1995) argues that this strategy aims to lessen the amount of energy buildup. In most worksites, especially those specializing in chemical reagents, the workers reduce the concentration of chemical reagents in the attempt to reduce the amount of chemical energy expelled by those chemicals. Highly concentrated chemical reagents are more likely to cause severe damage than less concentrated chemical reagents. Additionally, the driver may reduce the speed of vehicles to diminish the amount and magnitude of kinetic energy.

Thirdly, Haddon (1995) proposed a countermeasure strategy that involved preventing the release of the energy. This strategy is applied in building and constructions of apartments. Specifically, building and construction companies usually place grills on balconies of apartments to prevent children from falling off from the balcony. By so doing, the grills prevent the occurrence of injuries attributed to falls where the victim initiates the release of kinetic energy.

Fourthly, Haddon (1995) proposed a strategy that addresses how to reduce the rate of release of energy to prevent damages from occurring. According to Haddon (1995), this strategy focuses on modifying the rate at which the energy is released by its source. This countermeasure strategy is applicable in skiing and urges businesses that offer skiing sports to reduce the slopes of ski trails, especially for beginners. By so doing, the rate of release of kinetic energy would reduce tremendously and as a result safeguard the beginners from injuries that may be caused by the excessive release of kinetic energy during skiing.

The fifth countermeasure strategy involves separating the host from the potential energy source. The argument behind this strategy is that the greater the distance between the energy source and the host the safer is the host from the damages and injuries. Haddon (1995) argues that this countermeasure strategy not only advocates for a spatial separation between the energy source and the host but also a separation in time. For instance, we observe that in every highway there are separate sidewalks meant for pedestrians and separate vehicular traffic lanes along which vehicular traffic flows. The separation of sidewalks and vehicular traffic lanes assists in reducing the incidents of pedestrians from being knocked out by the fast-moving vehicles.

The sixth countermeasure strategy involves placing a barrier between the energy source and host. In addition to separation in space and time, this strategy advocates for the separation of the host and energy source using interposition of materials (Haddon, 1995). For instance, we observe in the worksites that most electrical connections are insulated to ensure that there is a physical barrier between the electrical energy and human intervention. In other cases, motorists wear helmets and other protective garments to place a barrier between the energy source and themselves. The essence of placing a barrier between the energy source and host is to reduce the severity of damage that may be caused by the energy source.

The seventh countermeasure strategy involves absorbing the energy. This countermeasure strategy endorses modification of subsurface, contact surface and surface of equipment in a way that they are friendly and less likely to harm the people interacting with them (Haddon, 1995). For instance, baby toys need to have round edges as opposed to sharp edges to prevent cases of injuries as children play with them. The automotive industry has adopted this countermeasure strategy by incorporating the airbags in vehicles that play a significant role in protecting the drivers from the effects of kinetic energy in cases of vehicular accidents. In other words, the airbag absorbs most kinetic energy when a car hits an object while moving with speed, protecting the driver from the severity of the effects of kinetic energy.

The eighth countermeasure strategy involves strengthening the susceptible host. The strategy recommends strengthening the structure of the host to make it resilient to the effects of energy transfer (Haddon, 1995). For instance, military soldiers receive vaccinations to strengthen them against ionizing radiations. By so doing, the body of these soldiers become resistant to these radiations and are less likely to suffer from the effects of ionizing radiations. Hence, they are able to conduct their duties effectively without fear of their bodies being damaged by ionizing radiations.

The ninth countermeasure strategy involves moving rapidly to detect and counter the damage that has occurred. This countermeasure strategy urges the involved people to act rapidly in detecting and evaluating the damage that is about to occur or the damage that has already occurred (Haddon, 1995). In most worksites, people use fire alarms, fire doors, sprinkler, emergency medical alarms and emergency transport systems to attend to the damages attributed to energy transfer including the fire amongst other. The attempt to move rapidly in addressing the damages is to minimize the loss of property and lives of people involved in the incidents.

The tenth countermeasure strategy involves taking appropriate procedures to ameliorate the damage. The strategy addresses all the measures required to stabilize the damage from the intermediate procedures of dealing with the emergency to the final stabilization procedures and rehabilitative measures (Haddon, 1995). In most workplaces, we observe that they conduct staff training after certain incidents to revamp workers’ knowledge and transfer special skills that would enable them to effectively deal with future incidents. Moreover, the victims of workplace incidents are provided with rehabilitative measures including counselling services to assist them in recovering quickly from the psychological effects of those incidents.

**Exercise 2: Applying the Safety and Health Management Systems Approach to Workplace Ergonomics**

According to the information provided in the case study, the truck driver, Ben, sustained back injury when tying down the tarps on the flatbed trailer because of failing to adhere to the appropriate safety rules and procedures. In fact, the company did not contribute to the injury of the truck driver, Ben. Indeed, the case study states clearly that the company had provided Ben with tarps and rubber straps to ensure that the load was covered properly. The cause of back injury could be attributed to bad posture when Ben was tying down the tarps. According to OSHA guidelines, it is the responsibility of the driver to observe safety measures and procedures, especially those related to postures (OSHA, n.d). Specifically, OSHA recommends drivers to adopt the right posture in all their duties to avoid straining their muscles. For that reason, Ben’s failure to follow the appropriate safety rules contributed to the back injury. Therefore, the truck driver cannot blame the company for his back injury if it had provided him with adequate safety training. OSHA and FMCSA require companies to provide their employees with safety training to reduce the cases of occupational injuries (Federal Motor Carrier Safety Administration, 2014). In the case study, it is evident that the company had complied with the Cargo Securement rules just as required by FMCSA. The company had provided the truck driver with all the necessary items required to cover the load before transit, including tarps and rubber straps. As such, the case study indicates that the company could provide anything to the truck driver, if requested, to ensure that the process of covering the load was accomplished properly and safely. However, Ben did not request any additional item apart from the tarps and rubber straps to assist him in tying the tarps effectively and safely without sustaining back injury. Perhaps, Ben could not sustain back injury if he requested assistance of other people in the company. In conclusion, the truck driver is at fault but not the company.

References

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