Assessment of physical workload in boiler operations

Technology

Number] Assessment of physical workload in boiler operations The article is about the use of boilers in the Brazilian industries and the threat to workers due to these boiler operations. The boiler is used in many processes and is considered to be dangerous as it impacts the humans if it is not handled carefully. The boiler activity causes several health problems to the workers including fatigue, psychological problems, and body aches. The aim of the article is to focus on the risks involved in boiler activities, the reasons for the failure of these boiler activities causing health problems, and the ways to improve the process and decrease the risks involved (Rodrigues 406).

The study was conducted on the physical burden that the operators of the boilers face during the workday. The boiler operations are not mechanized processes because of which the operators face immense health problems and are exposed to major risks. Operators were chosen as the subject of this study because they are largely affected by the accidents. These accidents occur usually because of the lack of operating procedures as well as the inattention of the operators towards the alert devices that are subjected to send alerts about possible mechanical problems and errors. These operators exercise manual activities with increased physical workload and excessive high temperatures exposure during the workday (Rodrigues 407).

The factors that are considered for this study are heart rate, thermal overload, and physical workload. The functioning of the heart is very important for a worker. Studies have found out that the heart rate of the workers increases as they start off with their work and eventually it gets stabilized with the activities that require fewer efforts. However, in boiler activities, the heavy workload results in continuous increase in heart rate

which may cause the death of the worker. The thermal overload includes the metabolic heat as well as the heat released from the physical activities. The high temperatures and the heart rates combine to increase the blood pumping in the body to the muscles. In order to maintain with the external temperatures, the body’s inner temperatures and functions are rapidly producing liquid to dissipate the amount of heat resulting in the loss of electrolytes in the body. Wood is the main component of the procedure and the handling is done manually resulting in excess physical overload on the operators. The heavy work with the high energy consumption, burden on lungs, and rapid hear rates cause risks of health problems (Rodrigues 408). The physical workload was assessed on the basis of the Nordic Questionnaire of musculoskeletal symptoms, the heart rate, and the Diagram of Painful Areas. The heart rate was measured through the equipment called a heart rate meter. This device has three parts; a transmitter, a digital pulse receiver, and an elastic strap with electorates. The thermal overload was measured through the use of tape measure to mark the points where the operator stayed during the boiler operations. At these points and the rest of the area, the WBGT Index was determined (Rodrigues 408).

In conclusion, the study found out that the boiler operations cause several health problems and pain in different parts of the body because of the high temperatures, workload, exposure to heat, and physical burden of loading heavy products. Boiler operations are manual and they require great physical effort causing diseases as severe as cancer. Recommendations were also made to use personal protective equipments such as aprons, boots, leather gloves, masks, and safety glasses. In order to reduce the

physical burden, the conveyor belts could be used and operators could be trained to perform the functions (Rodrigues 412).

Work Cited

Rodrigues, Justino. Assessment of physical workload in boiler operations. Brazil: IOS Press, 2012. Print.