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RISK ASSESSMENT AND ANALYSIS FOR OCCUPATIONAL NOISE IN OIL REFINERY WORKPLACE

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ABSTRACT

Nowadays, Occupational noise is effect human health in industrial workplace. So this work is to evaluate occupational noise in oil refinery and Its risk assessment by using risk rating scale technique, Typical oil refinery in Libya is used as case study in this work, which consist of two oil refinery plants, steam generation units, utility units, control rooms, and storage tank area. The noise-measuring meter used in this survey was sound level meter (Cirrus CR:831C), measurements will be compared with Occupational Safety and Health Act (OSHA) in decibel (85 dBA), Ten (10) site surveys were done for (29) master points distributed in the workplace. the measurements were collected during (2018). Minitab software version 17 will be using to statistical analysis for gathered field data. Risk assessment is based on Risk Matrix (5*5) for five noise level (N) scales which are (N<70,70<N<85,85<N<100, 100<N<115, N>115). Risk score (R) is depends on probability (P) of noise scales and their impact (I), R= (P*I). Results show the majority of gathered data (70%) of the measurements were over range according to OSHA permission limits (85decibel), It means workers in Oil refinery workplace are exposing to high level of noise. Thus, it is highly recommended to increase the workers safety awareness and enhance the workers condition on noise exposure in workplace. Finally risk assessment presented that workplace is dangerous due to high risk score for noise level (Risk is High for N>85 dBA) that could harm the workers so doing mitigation strategies to reduced sound levels, such as reduce exposure time, reduce noise from the source and using PPE.

Keywords : Occupational Noise, Risk assessment, Oil Refinery, Workplace , OSHA.