UNIVERSITI TEKNOLOGI MARA

NOISE EXPOSURE AND HEARING LOSS IN A STEEL INDUSTRY

MUHAMMAD ISMAIL B HARUN

Project paper submitted in partial fulfillment of the requirements

for the degree of

Bachelor in Environmental Health and Safety (Hons.)

JULY 2012

Declaration by Student

Project entitled "Noise Exposure and Hearing Loss in Steel Industry" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Mdm. Nadiatul Syima bt Mohd Shahid as Project Supervisor and Prof. Madya Hazilia bt Hussain as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons.)

Student' Signature:

.....

Muhammad Ismail B Harun

2008403252

890218086589

Date: 24/7/2012

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim. In the name of Allah, all Praise is due to Him, the Sustainer of the Heavens and Earth and all that is within it and may His Blessings be upon the Prophet Muhammad SAW, peace be upon him.

Alhamdulillah, I'm so greatful to Allah SWT because of His blessing, I enable to complete my final year project due to fulfill requirement for this course successfully. Many people involved directly or indirectly giving their helps, sharing knowledge and giving their encouragement during completing this final project.

I would like to express my sincere appreciation to my supervisor, Mdm. Nadiatul Syima bt Mohd Shahid for her inspiring guidance, opinion, tolerance, encouragement and support to all my works and in the preparation of this project. Without her cooperation, my effort would not be as successful as it has been. Oral support was inspirational to me. May Allah bless you.

I would also like to express my appreciation to Prof. Madya Hazilia bt Hussain for her help and assist during my study. With her advice, invaluable opinion and suggestion, I be able to finish my project. Special thanks also I express to En. Ahmad Razali b Ishak, who was willing to discuss the problems that I encountered during my research and his kindness in reviewing my thesis. Thanks also to En. Nazri b Che Dom who helped and assist me in analyzed the data during my research.

Special thanks also to En. Mohd Shafie B Md. Latef who helped me sharing and solving my problem during my sampling work. I also would like to thanks En. Faizal, En. Zain and En. Zainal for their help and assist in the field. I gratefully thanks to all my friends who have given their encouragement.

Last but not least, my deepest appreciation is extended to my father, Hj. Harun b Mat and my mother Hjh. Zaini bt Rasdi who always understanding and pray for me. Finally, great appreciations to all my sisters and brothers for their loving support.

TABLE OF CONTENTS

Abstract

Noise Exposure and Hearing Loss in Steel Plant

Muhammad Ismail B Harun

Noise induced hearing loss (NIHL) is a sensori-neural hearing deficit that begin at the higher frequencies (3000 to 6000 Hz) and develops gradually as a result of chronic exposure to the excessive sound level. It is mostly found in the developing and industrial countries workers. The objective of this study was to determine the relationship of noise exposure level between exposed and non-exposed group with hearing loss among workers at steel making industry. A cross sectional study was conducted involving 64 respondents from steel industry workers which located at Banting, Selangor. The study was done during the period of March to May 2012. The method of this study included a questionnaire, area noise level monitoring, personal noise monitoring and also audiometric test. The respondents were divided into two groups which is exposed and non-exposed group where each of group consists of 32 respondents. The results of this study were as follows: The noise intensity in the steel making plant range from 62.2 dB(A) to 112.3 dB(A) and in administrative office range from 46.8 dB(A) to 83.3 dB(A) and a number of 24 respondents (75%) of the exposed group got NIHL, compared to 2 respondents (6.3%) of non-exposed group. There was a significant difference in the incidence of NIHL between exposed and non-exposed group. The conclusion is the workers that exposed to high level of noise will develop hearing loss. Immediate corrective action must be taken to prevent this incidence occurs.

Keywords: Noise induced hearing loss, personal noise exposure, audiometric test