IDENTIFICATION AND NOISE HANDLING FOR DECREASING DEAFNESS RISK USING EX POST FACTO METHOD
(CASE STUDY IN COAL GENERATION POWER PLANT AT TJIWI KIMIA MANUFACTURING COMPANY)

By : Decky Susanto
Student Identity Number : 9107.201.506
Supervisor : Prof. Dr. Yulinah Trihadiningrum, MAppSc
Co-Supervisor : Ir. Sritomo Wignjosoebroto, MSc.

ABSTRACT

Coal Generation Power Plant of Tjiwi Kimia manufacturing company is the most important sections among the other units. The main function of this plant is to provide power and steam supply for all production processes. The life time increase of the equipment may cause noise impact to occur.

Noise identification was conducted during this research by measuring the intensity and frequency from noise data history, which was available at Industrial Safety Department. Direct measurement was done by using integrated sound level meter type TES 1353. Noise mapping was made by using cadna noise dose meter predictor type 7810 software.

The noise impact was observed from work accident history data, employee’s audiogram test results, and health claim data from Citra Medika Sidoarjo hospital. Questionnaires using likerts scale were distributed among the employees. Data processing was done using ex post facto method in order to compare the current and previous noise data by using Minitab Release 14 for windows software. Sampling was conducted by simple random method. The obtained data were tested using Pearson correlation test.

This research resulted in noise level average at boiler site of 85,0 dBA, and that of the turbine of 92,0 dBA. The main noise causing factors were human and equipment. These factors had caused the employees to suffer from an average deafness level up to 63,2 dB.

The correlation data results concluded that the increase of noise level from 2006–2008 significantly affected the employees deafness level. The recommended noise handling priority was by implementing good management policy for the improvement of human factor.

Keywords : noise, sound intensity, sound frequency, Ex Post Facto Method, correlation test