INDUSTRIAL NOISE POLLUTION AND CONTROL

K. D. DEVAPRIYA

Finlay Instant Teas (Pvt.) Ltd., Ingiriya, Sri Lanka

During the last few decades there has been increasing concern with the quality of the environment. Along with contaminations of land, air and water, noise has been recognized as a serious pollutant. Noise is defined as "unwanted sound" and has adverse effects on people and environment in various ways. Noise causes hearing loss, interferes with human activities at home and wok places and causes injuries to people's health and their well being.

Noise has many different sources; transportation noise, construction noise, household noise due to modern electrical equipment and industrial noise are all large-scale offenders. It is important to study each in detail to quantify and to reduce noise pollution.

A detailed study has been undertaken to measure the noise pollution in an industrial plant situated in a rural area of Kalutara district. The plant was recently commissioned and this setup is new to Sri Lankan industry. It uses various types of machinery and thus produces noise of different tones, which are new to its environment. There have been several complaints to authorities regarding noise pollution and therefore several methods were applied to reduce the noise pollution level.

Initially, the noise levels were measured at different locations in the factory and in the nearby village and analyzed. This was followed by a detailed study using a sound level meter conforming to IEC 651 – 1979 type 2 and interfaced to a personal computer for online and continuous data recording, to identify the main sources of noise and to evaluate the noise levels due to individual components. Using this information, several low cost strategies of noise reduction like acoustic insulation, acoustic casing and some design revisions were made to reduce noise and their effectiveness was assessed.

Other solutions, which need a thorough design and operational changes, were not implemented in view of their high cost.

It is recommended that the noise reduction options have to be implemented from the initial stages of the project. The layout of the factory buildings needs to be designed to reduce noise reflections and confine them into the plant area itself. The selection of the land and the construction materials can also increase the noise pollution problem. The orientation, elevation of the factory and wind pattern in the factory site too need to be considered, as those cannot be changed after the setting up of the factory.