Abstract

In this research, a study on the measurement sound pressure level, from the noise that is emitted from the main components of the boilers of an electrical generation stations was made The state chosen were South of Baghdad, Daura and AL-Mussaib power station, taking into accounts their (capacity, building, and energy generation).

Emitted noise was measured using sound pressure level meter instrument for the main components of the boilers were as follows: -

1- Forced draft fan, cooling air fan, gas rotation fan.
2- Air heaters, heaters.
3- Feed water pumps, heavy oil pumps.
4- Burners.
5- Leak of tubes.
6- Safety valves.

The procedure of measurement covers: -

1- The effect of the wind direction and temperature on the increase in sound pressure level.
2- The noise effects at far distance from noise reference.

For analysis of the emitted noise, and to reach to accurate results, a computer program Grapher, Matlab was used.

The results of theoretical calculation and practical measurements were computed to give high values. Results from theoretical calculations were noticed as where the results have declared a reduction in sound pressure level value, because the distance increases from noise reference, as where the maximum low value (15dBA) from forced draft fan at AL-Mussaib Station.

A comparison was made between theoretical calculation and practical measurements of sound pressure level, the results have showed an increase in value computed with that of theoretical calculation, such as (114-

111dBA) from practical measurements, as where the value from theoretical calculation was (112-95 dBA).

In comparison with the results according to global standards from (International Organization for Standardization and Occupational Safety &Health Administration), it was found a reduction in sound pressure level value is made by using an attenuate (glass wool) and barriers (cutting of the paths for structure borne sound, by elastic joints between different parts of the building or visco elastic layers in walls and beams), and by using concrete. The maximum value attenuation comes from the main sources of boiler noise, according to global standards in AL-Mussaib station comes from: -

1-**F**rom burners (23.5dBA).

2-**F**rom heaters (19.5dBA).

3-**F**rom fans (15dBA).