ABSTRACT

PT X is an oil and gas exploitation company that refining crude oil by using PV 9900 separator. As the reality, the PV 9900 separator has noise level up to 99.01 dB in this separator and up to 73 dB surrounding Central processing Area (CPA).

In this research, the noise level is measured from the data of the measurement it is created into noise mapping using Surfer 8 to pattern noise distribution in some area. The measurement of overall separator PV 9900, gas pipe line and CPA are used to find out the noise reduction which is used to become the calculation standard. The noise control is enclosure in PV 9900 separator, wrapping pipeline, and natural barrier surrounding the CPA. The design which is used 30 mm steel and 9 mm acoustical plaster, which is combined with lamination. The gas pipelines wrapping is used 25 mm rockwool and 3 mm acoustical protective KNM-100AL. The natural barrier is used glodokan tiang trees (Polyalthia longifolia) which planting in the buffer zone and outside the CPA (Central Processing Area).

The enclosure design of separator PV9900 design can reduce noise until 65.6 dBA. In other side, gas pipelines wrapping can reduce pipe noise until 64.4 dBA. The natural barrier that planting Polyalthia longifolia, it can reduce under 55 dBA.

Keywords: noise, enclosure, wrapping, natural barrier, sound level meter