

ABSTRAK

PENGARUH JARAK SUMBER KEBISINGAN TERHADAP KINERJA PEKERJA PEMBANGKIT LISTRIK TENAGA PANAS BUMI ULUBELU

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Kebisingan adalah bunyi atau suara yang tidak diinginkan dan dapat mengganggu kenyamanan, kesehatan, dan keselamatan kerja. Penelitian ini bertujuan untuk mengetahui pengaruh jarak sumber kebisingan terhadap kinerja pekerja, pola sebaran kebisingan berdasarkan hasil pengukuran, serta pengaruh sumber kebisingan terhadap perbandingan hasil pengukuran menggunakan *Sound Level Meter* dan aplikasi ponsel di area kerja PLTP Ulubelu. Metode yang digunakan adalah pendekatan kuantitatif deskriptif melalui pengukuran di 100 titik menggunakan *Sound Level Meter* (SLM) dan aplikasi *Sound Meter* pada telepon seluler sebagai pembanding. Hasil menunjukkan bahwa semakin dekat jarak terhadap sumber kebisingan, semakin tinggi intensitas yang terukur, di mana pada jarak 0–5 meter (area kompresor) kebisingan mencapai 104,60 dB; 10–30 meter sebesar 91,12–93,38 dB; 40–50 meter 89,6–90,4 dB; dan >55 meter menurun menjadi 43–60 dB, dengan nilai terendah di area dormitory (36,75 dB). Sebaran kebisingan menunjukkan 35 titik zona merah (>90 dB), 31 titik zona kuning (85–90 dB), dan 34 titik zona hijau (<85 dB), dengan total 37 titik atau 37% melebihi Nilai Ambang Batas (NAB) 85 dB. Kebisingan tinggi yang dominan di area dekat sumber suara berpotensi menurunkan kinerja PLTP karena dapat memengaruhi konsentrasi pekerja, meningkatkan risiko kesalahan operasional, serta mengurangi efisiensi pengawasan dan kontrol sistem. Oleh karena itu, upaya pengendalian teknis dan penggunaan pelindung pendengaran perlu diterapkan secara optimal di area rawan seperti power house, heat exchanger, dan cooling tower untuk menjaga keselamatan dan kinerja operasional pembangkit.

Kata kunci: Kebisingan, *Sound Level Meter*, Peta Kontur, Jarak

ABSTRACT

THE EFFECT OF THE DISTANCE OF THE NOISE SOURCE ON THE PERFORMANCE OF ULUBELU GEOTHERMAL POWER PLANT WORKERS

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Noise is unwanted noise or noise and can interfere with work comfort, health, and safety. This study aims to determine the effect of the distance of the noise source on the performance of workers, the noise distribution pattern based on the measurement results, and the effect of the noise source on the comparison of measurement results using *the Sound Level Meter* and mobile phone application in the work area of the Ulubelu PLTP. The method used is a descriptive quantitative approach through measurements at 100 points using *Sound Level Meter* (SLM) and *the Sound Meter application* on mobile phones as a comparison. The results show that the closer the distance to the noise source, the higher the measured intensity, where at a distance of 0–5 meters (compressor area) the noise reaches 104.60 dB; 10–30 meters with 91.12–93.38 dB; 40–50 meters 89.6–90.4 dB; and >55 meters decreased to 43–60 dB, with the lowest value in the dormitory area (36.75 dB). The noise distribution shows 35 red zone points (>90 dB), 31 yellow zone points (85–90 dB), and 34 green zone points (<85 dB), for a total of 37 points or 37% exceeding the Threshold Value (NAV) of 85 dB. The dominant high noise in the area near the sound source has the potential to reduce the performance of the PLTP because it can affect worker concentration, increase the risk of operational errors, and reduce the efficiency of system supervision and control. Therefore, technical control efforts and the use of hearing protection need to be applied optimally in vulnerable areas such as power houses, heat exchangers, and cooling towers to maintain the safety and operational performance of the plant.

Keywords: *Noise, Sound Level Meter, Contour Map, Distance*