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Community response to low frequency noise from power plants by gas turbine engine generator. Correlations among European studies and Peruvian related cases. Results of four years researching work with more than 300 stakeholders showing health problems

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ABSTRACT

This paper presents the results of more than four years to research and investigation of community response to low frequency complaints, all of these from engines which use natural gas as combustible. Since 2005 the natural gas has been used to produce electricity in Peru, and the power plants were built at the same place that the old ones in the middle of residential neighborhoods or even on open spaces nearby suburbs. The environmental acoustic impact was high and the previous statement doesn't account the social and health issues of the people, mainly because the study was conducted by non-acousticians, and all prediction measurements were made using "A" frequency weighting (not spectral). Because of the people who live in the vicinity of the one power plant, they presented several complaints at different Government Authorities asking for an environmental impact statement would cover all aspects: acoustic, health issues, psychological annoying, etc. The authors of this paper have been initiated the researching work in order to achieve the explanation for the great number of stakeholders. Firstable, were conducting measurements using "C" and "G" frequency weighting and 1/3 octave band, and the results were compare and correlated to European's with accuracy among them and the percentage of Peruvian annoyed people. Health problems were found with environmental noise under 50 dBA and very high acoustical energy in the low frequency range. The major concern is lying onto night hours because the noise is more noticeable affecting children and older people sleeping.