DETECTION OF MULTI DAMAGE ON THE PUMP USING THE ACCELEROMETER ARRAY

Student Name : Anisatul Fauziyah
NRP : 2412105008
Department : Engineering Physics-ITS
Supervisor : Dr. Dhany Arifianto

Abstract

Vibration measurement is generally performed on a running rotating machine but when there are two or more machines that operate in a foundation, if the results of the measurements really describe the condition of the engine. Therefore it is necessary to detection of damage pump that affected from vibration transmissibility another pumps in a foundation using accelerometer array. Detection of the damage performed by measuring the vibration of the pump that is at the foundation. From the results of the study prove that the transmissibility can be detected using an accelerometer arrays evidenced by the change in the pump damage diagnosis are seen in spectrum of the Fast Fourier Transform. Detection of the damage performed by measuring the vibration of the pump that is at a foundation. Transmissibility value that is negative indicates a destructive superposition example the pump misalignment of 2mm (which is operated by the pump 27 gram. cm) with result a value of -7.7296 dB transmissibility. While a positive value in transmissibility indicates that constructive superposition example the pump bearing fault (unbalance pump operated with 27 gram. cm) with a value of 3.6719 dB.

Keywords: Detection of damage pump, Transmissibility, Accelerometer Array, Calculation of Transmissibility, Fast Fourier Transform, Superposition.