عنوان مقاله:

Detection of Clogged Impeller in the Centrifugal Pump using the Vibration andMotor Current Analysis

محل انتشار:

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خلاصه مقاله:

The impeller-clogging phenomenon in centrifugal pumps is such kind of the faults that leads to increase the vibrationand reduce the performance of pumps. In addition, impeller-clogging could make some problems in the production process offactories. This research assigns to detection of the clogged impeller in a centrifugal pump using the vibration and motor currentanalysis. In this research, a test rig is set up and one of the impeller's passageways is clogged by sealing tape. The cloggingdetection, based on the vibration analysis, is done using the Fast Fourier Transform (FFT). The obtained results show that thedominant frequency in the impeller-clogging phenomenon is the rotational frequency of impeller (1xRPM). The measuringvibration values in three directions (horizontal, vertical and axial) show that the clogged impeller has more effects on the axialvibration responses. Furthermore, in this case, .electrical current consumption of electromotor has been reduced

کلمات کلیدی:

Centrifugal pump, clogging, vibration analysis, motor current analysis