

Expert System Source Identification of Excessive Vibration

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ABSTRACT

The importance of vibration data to determine the condition of rotating machinery is well established in both the aircraft and heavy equipment industries. Installation of non-contact displacement probes for shaft motion and either velocity or acceleration sensors for bearing cap or foundation motion is standard practice for equipment manufacturers. The automation of the diagnostic evaluation for certain simple faults can be easily implemented. The advances in computer languages in recent years have made it difficult to keep pace with the graphical capabilities available to the programmers. One major concern is the content of the knowledge base and the method of modifying the knowledge base or the procedure of evaluating the confidence of a given identified possible cause of a possible problem. This paper will address the application of one such expert system program to a recent vibration problem on a seven megawatt steam turbine driven generator located at the Virginia Tech Power Plant.

Keywords: expert, vibration, diagnostics, stability.