ANALYZING A PIPE SYSTEM CONNECTED TO THE COMPRESSOR THAT HAS VIBRATE AMPLITUDE 45.7 µm BY USING THE SOFTWARE OF CAESAR II 5.20

Name : ZELVIA MANGGALASARI  
NRP  : 1108 100 009  
Department : Fisika FMIPA-ITS  
Supervisor : Dr. Melania Suweni Muntini, M.T. Drs. Achmad Chamsudi

Abstract

The presence of a pipe system is an important in industry, the failure of the work on a pipe system will cause a quite big financial loss for repairing and also in the production process. A pipe system which is connected to the compressor, the compressor will cause the pipe system vibrate which cause the pipe can get failed in operation. In this research, the researcher conducted the analysis of the vibration on a pipe system connected to the compressor with amplitude 45.7 µm. The analysis was done by the model of a pipe system on the software of Caesar II 5.20. The software of Caesar II 5.20 would analyze the stress and the frequency automatically on the pipe system. In this research, the researcher got the safe pipe system which was appropriate with the code and standard ASME B31.3 for the stress of the pipe system, NEMA SM 23 for the compressor nozzle load and API 617 for the vibration on the compressor. The researcher got the safe pipe system if the amplitude of pipe is 44.52406 µm. The amplitude of pipe system is less than the compressor amplitude. This condition is showed that the pipe system did not vibrate caused of the movement of the compressor.

Keywords: Compressor, Vibration, CAESAR II 5.20