Studi faktor gesek analisa tegangan pada cabang pipa = Friction factor at stress analysis studies for branch pipe

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Abstrak

Fluida baik berupa gas atau cair memerlukan media penghantar untuk dapat dipindahkan dari satu tempat ke tempat yang lain melalui sistem perpipaan. Untuk merancang sistem pipa dengan benar, engineer harus memahami perilaku sifat fluida dan sistem pipa akibat pembebanan dan regulasi (kode standar desain) yang mengatur perancangan sistem pipa. Perilaku sistem pipa ini antara digambarkan oleh parameter-parameter fisis, seperti perpindahan, percepatan, tegangan, gaya, momen dan besaran lainnya. Kegiatan perekayasaan untuk memperoleh perilaku sistem pipa ini dikenal sebagai analisis tegangan pipa atau analisis fleksibilitas.

Tujuan tugas akhir adalah analisa tegangan sistem perpipaan pada model cabang dengan kode standar desain ASME B31.3 dengan menggunakan dua perangkat lunak yaitu Caesar II Ver. 4.2 dan Autopipe Ver. 6.2. Analisis tegangan yang dilakukan terhadap model mempertimbangkan kondisi yang sama dan pada akhirnya diketahui bahwa terdapat perbedaan-perbedaan yang terjadi dalam pengolahan data. Perbedaan ini menimbulkan hal yang menarik untuk diskusi sehingga dapat mengoptimalkan perancangan secara baik dan aman.;Fluids which are gas or liquids need transport medium to move from one place to another places with piping system. In order to design piping system correctly, an engineer should know abaout the behaviour of the piping system because its load and the regulations (design standard code) that rule the piping system design itself. The behaviour of the piping described from phisics parameters, for example are displacements, accelerations, stress, forces, moments and another variables. The engineering process in this piping system called as piping stress analysis or more familiar with flexibilitiy analysis.

This paper would do a piping stress analysis system for a model which used two software that are Caesar II Ver.4.2 and Autopipe Ver.6.2 to find out stress result at a branch that using ASME B.31.3 design standard. The stress analysis to the model uses same condition and finally would be know the differences at data analysis. The differences are interesting topic to be discussed so it would uses for design correctly and safe.;Fluids which are gas or liquids need transport medium to move from one place to another places with piping system. In order to design piping system correctly, an engineer should know abaout the behaviour of the piping system because its load and the regulations (design standard code) that rule the piping system design itself. The behaviour of the piping described from phisics parameters, for example are displacements, accelerations, stress, forces, moments and another variables. The engineering process in this piping system called as piping stress analysis or more familiar with flexibilitiy analysis.

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