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Design and Analysis of Piping System with Supports Using CAESAR-II

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Abstract : A steam power plant is housed with various types of equipments like boiler, turbine, heat exchanger etc. These equipments are mainly connected with piping systems. Such a piping layout design depends mainly on stress analysis and flexibility. It will vary with respect to pipe geometrical properties, pressure, temperature, and supports. The present paper is to analyze the presence and effect of hangers and expansion joints in the piping layout/routing using CAESAR-II software. Main aim of piping stress analysis is to provide adequate flexibility for absorbing thermal expansion, code compliance for stresses and displacement incurred in piping system. The design is said to be safe if all these are in allowable range as per code. In this study, a sample problem is considered for analysis as per power piping ASME B31.1 code and the results thus obtained are compared.

Keywords : ASTM B31.1, hanger, expansion joint, CAESAR-II
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