

Advantages of Electrifying Offshore Compression System

Authors : Siva Sankara Arudra, Kamaruzaman Baharuddin, Ir. Ahmed Fadzil Mustafa Kamal, Ir. Abdul Latif Mohamed

Abstract : The advancement of electrical and electronics technologies has rewarded the oil and gas industry with great opportunities to embed more environmentally solutions into design. Most offshore oil and gas producers have their engineering and production asset goals to promote greater use of environmentally friendly compression system technologies to eliminate hazardous emissions from conventional gas compressor drivers. Therefore, this paper comprehensively elaborates the parametric study conducted in integrating the latest electrical and electronics drives technology into the existing compression system. This study was conducted in aspects of layout, reliability & availability, maintainability, emission, and cost. An existing offshore facility that utilized gas turbines as the driver for gas compression was set as Conventional Case for this study. The Electrification Case will utilize electric motor drives as the driver for the compression system. Findings from this study indicate more advantages in driver electrification compared to conventional compression systems. The findings of this paper can be set as a benchmark for future offshore driver selection for gas compression systems of similar operating parameters and power range.

Keywords : turbomachinery, electrification, emission, compression system

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