

Advanced Analysis on Dissemination of Pollutant Caused by Flaring System Effect Using Computational Fluid Dynamics (CFD) Fluent Model with WRF Model Input in Transition Season

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Abstract : In the area of the oil industry, there is accompanied by associated natural gas. The thing shows that a large amount of energy is being wasted mostly in the developing countries by contributing to the global warming process. This research represents an overview of methods in Minas area employed by these researchers in PT. Chevron Pacific Indonesia to determine ways of measuring and reducing gas flaring and its emission drastically. It provides an approximation includes analytical studies, numerical studies, modeling, computer simulations, etc. Flaring system is the controlled burning of natural gas in the course of routine oil and gas production operations. This burning occurs at the end of a flare stack or boom. The combustion process will release emissions of greenhouse gases such as NO₂, CO₂, SO₂, etc. This condition will affect the air and environment around the industrial area. Therefore, we need a simulation to create the pattern of the dissemination of pollutant. This research paper has being made to see trends in gas flaring model and current developments to predict dominant variable which gives impact to dissemination of pollutant. Fluent models used to simulate the distribution of pollutant gas coming out of the stack. While WRF model output is used to overcome the limitations of the analysis of meteorological data and atmospheric conditions in the study area. This study condition focused on transition season in 2012 at Minas area. The goal of the simulation is looking for the exact time which is most influence towards dissemination of pollutants. The most influence factor divided into two main subjects. It is the quickest wind and the slowest wind. According to the simulation results, it can be seen that quickest wind moves to horizontal way and slowest wind moves to vertical way.

Keywords : flaring system, fluent model, dissemination of pollutant, transition season

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