

Improving the emission rates of CO, NO, NO₂ and SO₂, the gaseous contaminants, and suggesting executive solutions for accessing standard qualifications - A case study of Bandar Emam Khomeini

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ABSTRACT:

Among different industries, petrochemical industry is one of the main air pollutants which pollute the air by gaseous contaminants due to burning bulk of waste gases in flares. It is assumed that due to having different pollutant sources such as flue, metals, corrosive and chemical reactions, the economic zone of Bandar Emam Khomeini included these gaseous pollutants. Thus in this research Carbon monoxide (CO), Nitric oxide (NO), Nitrogen dioxide (NO₂) and Sulphur dioxide (SO₂), the gaseous pollutants of production process in the operational units of Shahid Tongdouyan port were measured and compared to the environmental standards. Therefore accomplishing basic studies, data collection regarding situation of exhaust emission in this selected area, investigation of production case and its management were investigated through different interviews and visits. Then the plan for providing and analysing the exhaust samples and preparing related tables and charts were carried out. By average calculation of exhaust gaseous contaminants from the selected flues and providing the factors of pollutant emission, their variance and standard deviation were evaluated and the situation of production and emission of air pollutants were studied. Also the plan for gaseous pollutants and their emissions were formulated. According to the results, regarding stabilizing the emission scale of CO, NO, NO₂ and SO₂ emitted from Shahid Tongouyan petrochemical output, only the amount of CO emission was excessive. This scale is modulated from 3922 ppm to 117 ppm. Other pollutants were emitted in a standard limit.

Keywords:

Air contaminant, Gaseous contaminant, Contaminant emission, Environmental standards, Shahid Tongdouyan petrochemical company.