

**ELIMINATION OF HYDROGEN SULPHIDE FROM GEOTHERMAL STEAM BY
CAUSTIC SCRUBBING WITH HYDROGEN PEROXIDE**

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ABSTRACT

In the process, noncondensable gases escape into the atmosphere. One of the most noticeable gases of public health concern is hydrogen sulphide (H_2S). This study sought to investigate the exposure of workers to H_2S concentration in Olkaria geothermal power plants in Kenya. Olkaria geothermal power plants operated by KenGen at Hells gate national park in Nakuru County are the largest geothermal power plants in Africa. There is a general workplace believe that smell of rotten eggs in the power plants is a mere nuisance, and no hazard if it exists below the total weighted average (TWA) for occupational exposure limits (OEL) of 10ppm. Using questionnaires administered to a sample of the operations and maintenance team, impacts of exposure to ambient H_2S was investigated. Ambient measurements of H_2S were taken at hourly intervals at purposely selected sampling points in the two power stations. Clinical records for staff working in the operations department indoor conditions were reviewed and compared with those who worked in other sections. In most occurrences (> 80%), the measurements of H_2S ranged between 0.1-1.0ppm which is a weak smell above the odor detectable threshold. According to Costigan, 2003 exposure to H_2S within 2.0 -7.0 ppm levels may cause nausea, tearing of the eyes, headaches, loss of sleep and airway problems. A respondent who works in operations and maintenance required a combination of physical, mental and visual - audio skills where ($p > 0.37$, $n=40$) at 95% confidence levels.