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Sustainability in Fire Protection Design

In the course of an oil and gas project lifecycle, sustainability is a key step to be introduced in HSE design from conceptual phase through detail engineering in order to have an integrated and reliable safety system over the industrial plant. Due to the high cost of safety related items such as fire protection equipment, fire and gas detection devices, etc. a sustainable design in HSE related systems shall viably consider the environment, social safety and economic factors e.g. less water consumption, less utility cost, etc.

The fire protection systems play a crucial role in oil, gas and chemical industry by reducing the risk of fire damage and asset protection. Hence, the new procedures in design of fire protection equipment shall be applied to achieve low-cost and high-reliable safety systems.

In this presentation, a key step to sustainability is introduced for HSE design in oil and gas projects and a methodology in fire protection system design, at the start of EPC phase, is developed to target cost reduction in firewater network sizing. The proposed methodology consists of a consequence modelling to determine the boundaries of fire radiation contours followed by optimized fire water demands calculation and a scenario based fire protection system design.
