LOTUS GAS OIL CONSULTANTS

Onshore and Offshore Engineering

TITLE:	**Process Safety Engineering- Relief & Blowdown Study**		
LEVEL:	Advanced	**DURATION:**	3 days
DESIGNED FOR:	Process engineers & senior operating personnel responsible for designing, operating and maintaining relief and flare systems in oil and gas facilities.		
ABOUT THE COURSE:	This is an intensive 3-day course providing a comprehensive overview of relief and blowdown systems for oil and gas processing facilities. The course begins with the need for pressure control/overpressure protection, continues with the key engineering and design aspects including code considerations, relief and blowdown study, sizing relief devices and concludes with selecting and defining the components of a flare system. The material of the course is applicable to onshore field production facilities, pipelines, gas plants, terminals, and offshore production facilities.		
YOU WILL LEARN:	➢ Purposes of relief and flare systems and their importance in safe operations. ➢ Relief study code requirements. ➢ Causes of overpressure and the ways to control/ mitigate (relief study). ➢ Layers of protection. ➢ Types overpressure protection device. ➢ Safety instrument system. ➢ Defining the relief cases considering operations, upset/abnormal conditions and emergency situations (such as fire). ➢ Commonly used pressure relieving devices and how to select and size these devices. ➢ Determining set/relieving pressures to meet operational, safety and Code requirements. ➢ Defining the depressuring calculation requirements, sizing basis and design basis. ➢ Operational considerations of maintenance, testing, certification, and disposal of fluids. ➢ Introduction to Flare system design and network simulation.		

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LEVEL:	Advanced	**DURATION:**	3 days
COURSE CONTENT:	➢ Purposes and overview of typical relief and flare systems and key components. ➢ Safety implications and the causes of overpressure. ➢ Codes and standards as well as good practices typical in oil and gas facilities. ➢ Overpressure protection philosophy including source isolation and relief. ➢ Determination of relief requirements and defining set point pressures. ➢ Types and applications of common relief devices. ➢ Relief valve sizing for single, two phase and supercritical condition. ➢ Multiple relief valve installation requirements. ➢ Relief valve hydraulic/ piping requirements. ➢ Blow-down/depressurizing - purpose & design/ operational considerations. ➢ Preparing input data for HYSYS depressuring tool. ➢ Using HYSYS results for system design. ➢ Design and specification considerations for relief valves including fluid characteristics, services conditions, material selection. ➢ Introduction to flare network simulation.		