The Safe Operation Of Gas Systems

South Africa has experienced gas-related incidents reporting fires and explosions costing domestic, commercial and industrial facilities millions of Rands. However, these statistics say nothing of numerous other smaller events that occur and go unrecorded, such as boiler fires, process oven failures, piping ruptures, non-conforming installations, and non-suited/non approved equipment amongst others. These have been the cause of unpublicised damages and injuries. Unfortunately, action is often only taken on these issues after some large and tragic event occurs.

The Pressure Equipment Regulations (PER) Reg17 states; "No person shall…

a handle, store or distribute any gas in any manner, which includes the filling of a container, other than in accordance with the relevant health and safety standard incorporated into these Regulations under section 44 of the Act;

b install or remove an appliance, pressure equipment or system for gas in any manner other than in accordance with the relevant safety standard incorporated into these Regulations under section 44 of the Act;

c install or remove a gas appliance, or a gas system or a gas reticulation system, unless such person is an authorised person. ''

Taking the above regulations into consideration, one needs to consider the experience, knowledge, qualification, and competency of any person, whether internal or contracted, working in the gas industry or with gas-related equipment. Unless properly trained and qualified, no personnel or operator should be permitted to attempt repairing/replacing pipes or pressure equipment, tune burners, work on or replace burner management/control systems. The intent of Reg 17 is also to ensure all persons working on gas systems need to be registered and licenced with the registration body namely the SAQCC Gas.

Combustion equipment safety is critical to the daily operation of all facilities and the safety of every employee, yet awareness on this topic is lacking simply because it is deemed too "complicated". It takes diligence and understanding to protect employees, facilities and industrial organisations from combustion-related incidents involving fuel-fired equipment.

Being competent in only a specific field (silo approach) is not enough, persons working on gas systems should have a total understanding of the complete and integrated philosophy and functionality of gas systems (lateral approach). Once again, understanding the gas system or specifically combustion equipment safety is very critical from a performance and maintenance perspective.

An equal amount of emphasis should be placed on the importance of using compliant equipment, which also conforms to the required health and safety standards. There is typically no screening for how far away from the most recent health and safety standards the old "grandfathered" technology has become. Passing a statutory inspection sometimes means that you could be "technically" in compliance with archaic and antiquated equipment that is 50 or more years old. This could be equipment that requires many manual steps to operate safely and presents serious risk of improper manual start-up or shutdown daily. Equipment could be "in compliance" with this kind of inspection, but quite far from the current health and safety standards 'level of safety'.

Should grandfather equipment be progressively upgraded in line with newer technologies? Possibly, from a financial perspective probably ''no or not now'', from a safety perspective a definite ''yes''

The risk assessment of current gas equipment and gas systems needs to be ongoing and analytically direct the way to concrete affirmations of upgrading the site's equipment.

Once an incident occurs, it means years of court cases, job losses and changes, higher insurance rates, and maybe even criminal litigation. It also takes years to overcome the stigma of possible safety credibility to employees, industry and the community at large.

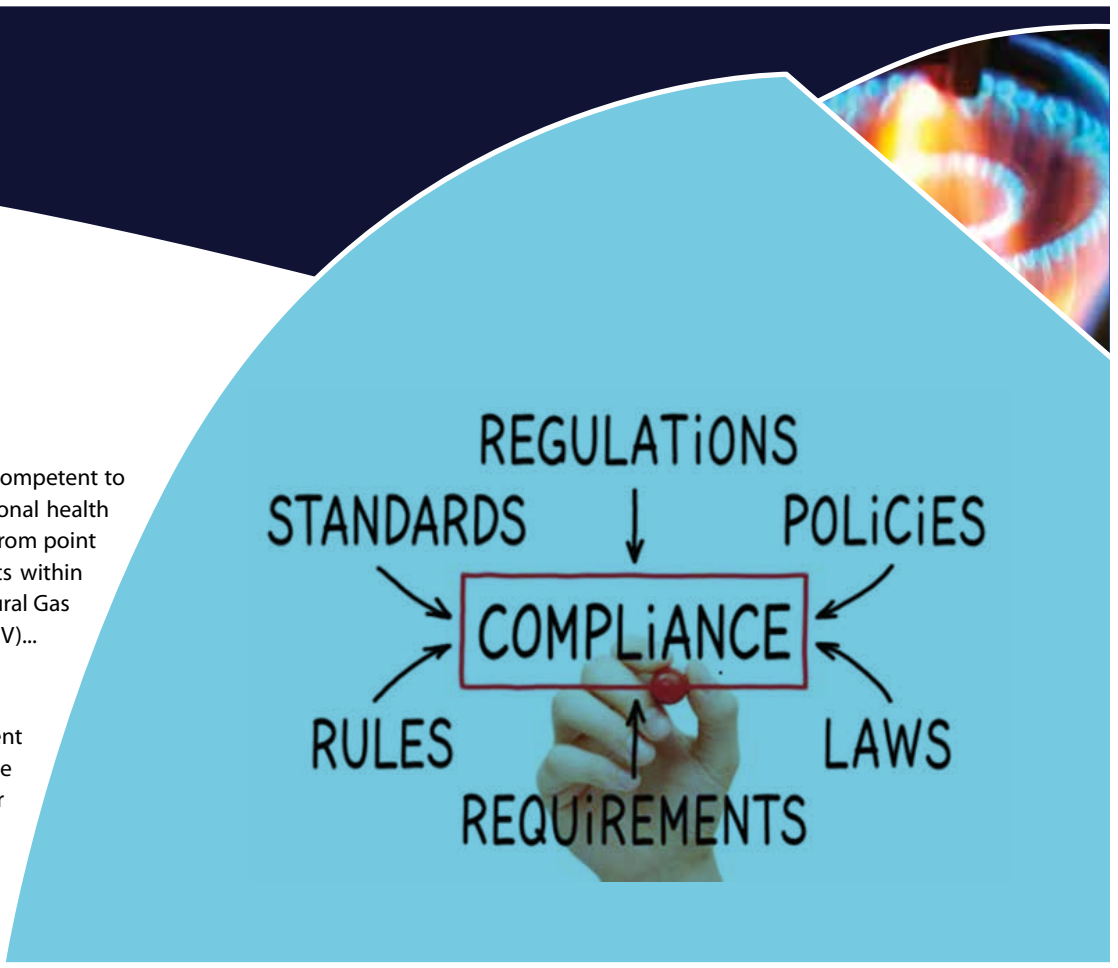
How should one ensure the safe operation of gas systems?

Start with a review of the equipment's state of protection relative to current health and safety standards, – an equipment "gap analysis." Prioritise your needs and address them at a comfortable pace. Conduct a human "gap analysis" to identify the state of knowledge and skills regarding your operations and maintenance staff. Make training a regular and serious effort. The bottom line is that by ensuring persons are competent and implementing comprehensive equipment safety programs saves lives.

The right thing to do is to be proactive and the very least is to ensure persons working on gas systems are licensed to operate and manufactured, imported and supplied equipment conforms to the required regulations which ensures equipment permits are obtained from the required authority, in this case, the Southern African Gas Association (SAGA).

SAGA™
Southern African Gas Association

Ensuring all persons working in the methane-based environment are competent to undertake work which complies with the relevant legislation and national health and safety standards in order to provide safe and efficient operations from point of supply to users in the domestic, commercial and industrial markets within Southern Africa. Covers Industrial Thermoprocessing, Compressed Natural Gas (CNG), Liquified Natural Gas (LNG), Biogas, and Natural Gas Vehicles (NGV)...



Safe Gas Equipment

Verifying Natural and Liquefied Petroleum Gas Industrial Equipment locally manufactured, imported and supplied prior to being placed in the market. Covers all equipment operating above 0.5 GJ/h or 10 kg/h or 140 kW in the Commercial, Industrial and Specialised environments. Being expanded to include NGV, Natural Gas fueling stations, CNG and LNG Industrial applications. The intent is to prevent the import and supply of non conforming equipment and that all equipment sold or placed in the market meets the Pressure Equipment Regulations

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