How digital communication simplifies the clearance process

Erring is human, they say. Sounds harmless – but it is not. Because if an error occurs during clearance of confined spaces, this can be a high risk for the workers on site. Digital communication helps to reduce errors and speed up processes.

Clearance measurement– a process full of information and long distances

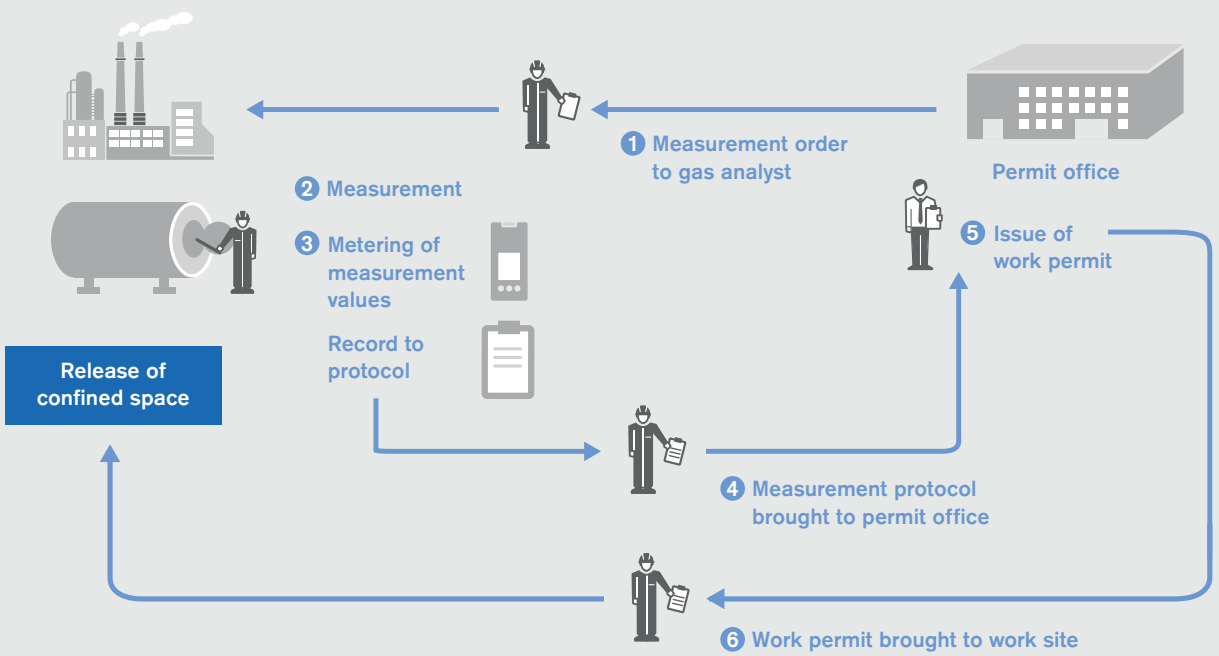
If a confined space needs to be cleared before starting work due to the evaluation of hazards and the risk assessment, a standardised procedure starts: The measurement order is created, usually printed and handed to the gas analyst. The gas analyst carries out the measurements, reads the values from his gas detector, fills them into the work permit protocol and signs it. The filled-out measurement protocol is brought to the control room and checked.

This is followed by documentation of the protocol notes and – if there are no concerns – the issuing of a permit, which in turn is brought to the safety responsible at the specific job site. Very clear: The clearance of confined spaces is an expensive and time-intensive process involving different people. And wherever people communicate, mistakes can happen.

Long wait times impair productivity

Shutdowns of a system or part of system are always a high cost factor in the chemical industry. The goal of increasing efficiency is to reduce these pauses as much as possible because downtime means loss. The physical transmission of information from A to B also binds the work time of the persons involved who then require more time for this task. Also, the production process is interrupted for a longer time. Sometimes, measurement processes including ventilation measures, walking and permit times have to be repeated several times. If then errors or misunderstandings also occur during the transfer of information this results in further loss of time due to corrections or even danger to persons. All this influences the productivity of a system negatively.

THE CLEARANCE MEASUREMENT PROCESS WITHOUT DIGITAL COMMUNICATION TOOLS



Bad light conditions, illegible handwriting

Already with the manual transmission of data of the measurement task, the following can occur: Often, typing paper is still used here today, in which the readability of the characters and digits decreases from copy to copy.

After measuring, poor light conditions such as sunshine or darkness can result in the values being read incorrectly and transferred thus to the measurement protocol. Rain and wind make it difficult to handle paper documents. In addition, there are different spellings of numbers in different language areas or generally illegible handwriting.

Challenge for concentration

The clearance of a container often takes place during ongoing operations in the surrounding plant areas or during downtime, with great activity in other areas.

This means: There are conversations among colleagues, work sounds of other colleagues and operational noise from adjacent production lines. All this distracts and makes it difficult to maintain important concentration during clearance measurements. The transmission of data under such conditions is a job that demands the highest mindfulness. In order to keep the risk for later work as low as possible, no part of the measuring task may be overlooked or left incomplete. The possible necessary repeated rinsing and ventilation of a container until the risky values finally fall consumes precious time. This increases the pressure on those involved and can be a test of patience.

Working under time and efficiency pressure

At large plants, it is not just one clearance job that is on the daily agenda for the gas analyst – but there are several sometimes under tight time constraints. Keeping track of things here is not easy. Decisions made from pragmatism, such as bringing forward a job because the job site is close to the previous one, can also lead to mistakes. For example, if the new sequence of the jobs is not documented and the measurement results are swapped or a job completely fails. In general, work that is carried out under high time and efficiency pressure can result in the potential for negligence.

Lack of routine

Any contractor authorised to clear a confined space must be authorised and certified in accordance with the local applicable occupational health and safety regulations. However, not all persons tasked with clearance measurement activities are specialised gas analysts. Lack of experience and lack of routine can potentially result in personal insecurity. If there are still time pressures and difficult conditions in the environment, it can be easier to make mistakes.

The solution: digital communication and assistance functions

The human factor in communication cannot be underestimated: It can, as described, be the source of many and possibly far-reaching mistakes. In addition, a high expenditure of time leads to losses in efficiency and productivity. This is where Industry 4.0 applications come into their own, supporting the work of gas analysts, supervisors, shift and control room managers: The measuring order can be sent in real-time from the control room via a cloud-based application to the gas analyst in the field. The gas analyst has all the job-related measurement orders on hand and can start with the

measurement. Via digital interface the measurement values can be sent to and documented in the cloud application. The assistance system installed on the gas meter supports him in taking the measurement correctly and optimally. The display adjusts to the light conditions: in day mode with a light background and dark numbers or in night mode with a dark background and light numbers.

The gas detector finally shows all measured values. If no other measures such as ventilation are required because all values are on the target level, the gas analyst sends the values and if applicable other relevant information 1:1 via the cloud application to the control room. There a plausibility and release check are performed as well as documentation and long-term storage of the measurement data for further analyses at a later date. Up to this point, there is no pen, no signature and no itinerary needed in the entire modern clearance measurement process. Only now does paper come into play: The work permit is issued and handed over to the supervisor at the specific job site.

The new, largely digitised process eases the work burden on the gas analyst and the control room. The Clearance 4.0 makes a great future contribution to error and thus accident prevention and increase process efficiency.

How the digitized clearance measurement process exactly works, this video shows: https://youtu.be/p6Qt9eDfcMw

For more information, visit also www.draeger.com

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