

Application: Emergency showers and eye wash

Industry: Chemical and Oil & Gas

Introduction

In a typical chemical plant or Oil & Gas facility you will find many emergency showers. These showers and eye wash facilities are part of the health and safety precautions to quickly act in case of an accident that involves spills with chemicals.

Why

Generally, there are many, hundreds of these units in a facility to be able to let people quickly react wherever they are in the plant in case of an accident. When used, this needs to be communicated to the emergency responds team, additionally it needs to be logged according to internal procedures, mainly to ensure the event is examined and the root cause is determined to learn from every accident. This way the plant becomes safer and hopefully accidents are not repeated.



Beside this, emergency showers and eye washes are not used very often and as a result there is a high change for the legionella bacteria to be spread when a shower is used. The Legionella bacteria exist in the water in small quantities without being harmful, however, it multiplies when the water stands still for a long time. If the shower is then used, the bacteria can be spread through the mist caused by the shower. Typically, every shower should be used or at least opened for a few minutes, once every week.



What:

To monitor the usage of the emergency showers and further improve safety, Aloxys's valve monitoring solution is introduced. A LPWAN network (DASH7 or LoRaWAN) is installed and the valves (handle) of the emergency shower or eye wash have been equipped with the Aloxys Pulse valve monitoring sensor. The valve position (on or off) is now "real time" available in the control system and its usage can be alarmed and logged.

How

The normal position of the handle of an emergency shower is closed and this is represented in the control room for every emergency shower. When the emergency shower is used this can be seen in the system and used to trigger a safety issue and start a root cause analysis. Beside that, all the emergency showers need to be operated regularly to prevent legionella. The responsible department can use the data coming from the sensor to monitor whether all valves have been operated without using checklist or this process can be automated so an alert is generated when a shower is not used in a timespan of a week.

Benefits

It is evident that safety is a major concern in the Chemical and Oil & Gas industries. Analyzing and learning from accidents is an important part of a healthy safety culture and that starts with identifying the accidents that happened. It could also trigger an emergency protocol were the Safety responsible site worker goes to the location immediately to assist and call an emergency response unit.

Increasing safety has enormous benefits, but additionally, this use-case is not only about reacting fast, it is also about prevention and making sure the showers and eye wash units are operated frequently to prevent that the legionella bacteria could be spread.