

## CHAZOP STUDY FACILITATION

### What is a CHAZOP?

It is a **C**ontrol **H**azard and **O**perability Analysis.

### WHY CONDUCT A CHAZOP?

A CHAZOP provides a systematic, multi-disciplinary technique to improve the safety and operability of electronic control systems. The CHAZOP process is based on the proven HAZOP technique.

The use of programmable electronic control systems is now standard in most process industries. These systems include Distributed Control Systems (DCS), Programmable Logic Controllers (PLCs), Supervisory Control and Data Acquisition (SCADA) systems and Safety Instrumented Systems (SIS).

While automation systems have become standard, we need to remain constantly aware of risks to personnel and plant that can result from incorrect operation of these systems.

A CHAZOP study can be used at any stage of an electronic control systems evolution; from conception, through development, implementation and later modification. It helps to identify improvements in the safety and reliability of any automated facility. By clarifying the user requirements, the implemented design can be made more robust, secure and operable. A CHAZOP can also be used to assess and identify improvements in existing automated facilities.



Given the demand on productivity and the ever-changing landscape in automation, it is essential to verify the safety of every automated function, both normal and abnormal.



### THE CHAZOP PROCESS

The CHAZOP process can be conducted at different stages of a project:

The **Preliminary CHAZOP** is carried out prior to detailed design to ensure the specification will meet the User's requirements.

The **System CHAZOP** provides a review of the "Control System", including the network, electrical supply, I/O, hardware, internal and external data and network connections, environmental factors and security.

The **Loop CHAZOP** reviews loop functionality such as continuous and on/off control, open/close valve operations, and motor start/stop, confirming the design intent and investigating the impact of failures on safe operation.

The **Sequence CHAZOP** is a technique for reviewing "sequential control", such as start-ups, shutdowns, batch processes, time based operation and similar logic.

### WELCON - INDEPENDENT EXPERTISE

Utilising a qualified external facilitator provides the systematic approach, while drawing on the inherent process knowledge held by site personnel.

Welcon can provide effective facilitation of the CHAZOP process, and along with your site personnel, systematically identify, measure and manage any control risks. The output of the study provides a comprehensive assessment and action plan to move forward.

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