



IOWs Integrity Operating Windows

Process safety in oil & gas

Major incidents associated with oil & gas operations highlight the importance of having robust processes and systems in place with appropriate measures to manage effectively Health, Safety, and Environmental (HSE) risks, to ensure both operations continuity and sustainable development (Fig.1).

Management of process safety is, therefore, a key concern for companies operating in the oil & gas industry and it can be achieved through the setting-up and implementation of Integrity Operating Windows (IOWs). This service is thus a cost-effective practice since it helps to prevent excessive component damages, which could compromise plant integrity.

Cescor can offer its high-level competencies in this study thanks to its deep and reliable experience in the integrity sphere and corrosion matter.



Fig. 1 – IOWs are intended primarily as a process to manage health, safety, and environmental risks.

International Standard and Definition

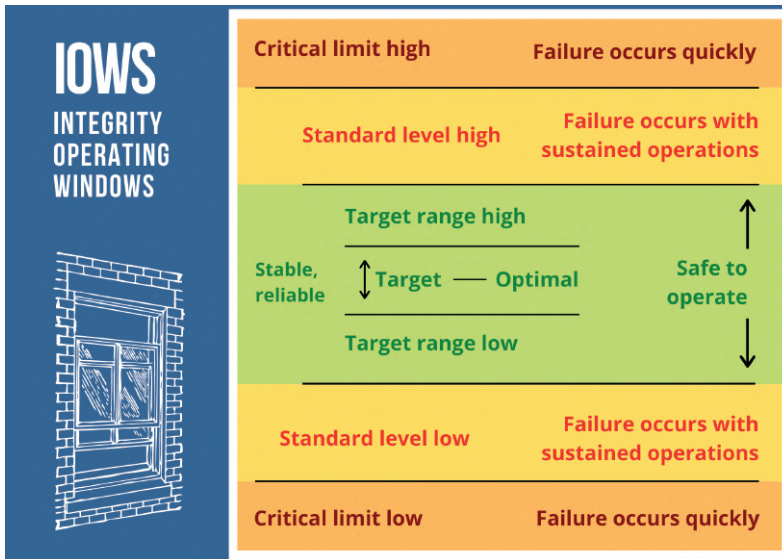


Fig.2 – Levels of operation with *Target, Standard, and Critical* limits.

Integrity Operating Windows (IOWs) are established following industry-recommended international standard API RP 584. They are developed to:

- Establish appropriate limits for process parameters (chemical or physical), called key process variable to prevent excessive facilities degradation and unexpected failures;
- Provide initial indicators where corrosion threats could become active, setting up IOW levels between Target, Standard, and Critical (Fig.2);
- Recommend appropriate actions to restore safe process operation within a given time frame.

IOWs shall provide a bridge between the design phase and operational phase to ensure the integrity of oil & gas facilities and maintain safe operations.

Our expertise in IOWs

IOWs analysis incorporates multiple aspects and needs the collaboration of a complete IOWs team with representatives from different engineering disciplines. Cescor can join the team as a corrosion and integrity specialist, able to propose tailored and pragmatic solutions suiting the client's requests.

IOWs study is a complex document providing information on:

- Corrosion loops to include similar corrosion threats, operating conditions, and materials of construction;
- Review of expected corrosion damage mechanisms;
- Consideration of risks in case of unforeseen damage mechanisms;
- Examination of corrosion mitigation and control methods already in place;
- Establishment of ranges for key process variables and assessment of IOWs levels;
- Guidance on corrosion monitoring strategies exploiting process sampling, analysers, and operation controls (Fig.3);
- Proposal for inspection strategies.



Fig.3 – Process controls and gauges are fundamental for IOWs purposes.

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