



## SMARTPLANT® SAFETY SOLUTIONS

### IMPROVE SAFETY BY REDUCING RISK IN CAPITAL PROJECTS AND PLANT OPERATIONS

Safety is a key element in the design and operational phase of any process or power facility. Safety starts early with conceptual design and continues to be verified against practices and risks. The best and lowest cost safety is one that follows the design – an inherent and passive safety. This is not always possible, so you need to understand what are the risks and where do they exist to make the best mitigation decisions.

Intergraph® SmartPlant® Enterprise solutions are rule-driven and can help enforce safe design from the start. For example, Smart 3D rules can manage area classification and determine if items with the wrong classification are located in an explosion-risk area.

SmartPlant Safety Solutions offer next-generation software packages that streamline process safety review and build your corporate safety knowledge base, leading to considerable benefits for capital projects and your operating plant.

Intergraph's SmartPlant Safety Solutions do not only apply to HAZOP execution. Before any HAZOP is performed, you need to check the design against the safety practices and engineering rules. Otherwise, you may need to repeat the HAZOP study, which is time-consuming and can, of course, create design changes and schedule impacts.

To deal with these challenges, Intergraph offers the SmartPlant Safety Solutions. Purchase the products which fit your workflow – each is available separately:

- SmartPlant Process Safety
- SmartPlant P&ID Engineering Integrity
- SmartPlant Action Management

### PRODUCTS

#### SMARTPLANT PROCESS SAFETY

SmartPlant Process Safety automatically identifies hazards from the plant's schematic drawings using SmartPlant P&ID. The product enables companies to:

- Produce consistent, high-quality HAZOP study reports for much less time and cost across the complete design
- Identify and eliminate hazards early in the design process, before change becomes limited and expensive
- Quickly and easily assess the effect of change on the safety of the entire plant
- Take advantage of action management to execute risk reductions

For capital projects, SmartPlant Process Safety leads to lower risk, improved design quality, and reduced schedules. For the operating plant, it means that through better Management of Change (MOC) processes, you can achieve improved and much faster re-HAZOPs and also increase plant safety. Powered by HAZID, SmartPlant Process Safety is an integral part of Intergraph's SmartPlant Safety Solutions.

## SMARTPLANT P&ID ENGINEERING INTEGRITY

The majority of an engineer's time is spent looking for data and checking for correctness and consistency. These tasks can now be automated with SmartPlant P&ID Engineering Integrity, a member of the SmartPlant Safety Solutions.

The out-of-the-box product delivers more than 3,000 rules based on API 14C. These rules can be plugged into SmartPlant P&ID. No programming skills are needed to add or modify the rules. It would normally take an engineer about two weeks to create and implement these 3,000 rules in their system.

SmartPlant P&ID Engineering Integrity will check the P&ID against these safety and engineering practices and project standards. The product then automatically reports any areas of inconsistency. The rules engine can be extended with customers' rules on safety or any other engineering checks that are normally performed manually.

## SMARTPLANT ACTION MANAGEMENT

SmartPlant Action Management transmits the required actions produced by the HAZOP and engineering checks to the appropriate disciplines. The software tracks the actions process and completions.

Part of the SmartPlant Safety Solutions, SmartPlant Action Management helps ensure on-time, high-quality delivery. You can also check before you release the P&ID or perform another check or HAZOP to ensure that all corrections have been completed, and if not, determine who needs to complete the actions.

Actions to make design modifications are assigned and managed for follow-up and approvals to ensure that the final design meets your safety standards and engineering practices. You can manage design activities across disciplines. SmartPlant Action Management helps you check design against safety and engineering practices early in the design and during all the design phases, reducing the risk of late and costly changes.

## ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data to make processes and infrastructure better, safer, and smarter. The company's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation, and data management of plants, ships, and offshore facilities.

Intergraph SG&I provides geospatially powered solutions to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is an independent subsidiary for SG&I's U.S. federal and classified business.

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