Honeywell’s Process Safety Analyzer is an advanced software that automates tracking, analysis and reporting on the operation of shutdown systems and safety elements, to promptly detect issues and continuously ensure process safety.

Ensuring safety is vital to protect people, environment and assets, especially with processes handling hazardous substances like oil, gas and chemicals. Process safety should be continuously ensured since unwanted events can occur if safety components cannot operate as expected when required. Essential components for process safety include shutdown systems and safety elements.

The traditional process of validating shutdown systems and safety elements relies on planned shutdowns, combined with manual data gathering and processing which is time consuming and prone to error. To improve the latter, Honeywell has developed Process Safety Analyzer (PSA) based on its proven technology, and working closely with customers operating on challenging and regulated environments pushing best practices forward.

PSA is a solution that automates the process of validating shutdown systems and safety elements, allowing companies to prove to authorities and other entities that continuous validation is performed to essential process safety components, enabling a prompt detection of issues for prompt action when necessary, and capturing reports to prove proper operation.

This efficient and automated way of tracking and validating the condition and operation of safety components with PSA helps customers to comply with:

**FEATURES & BENEFITS**

**Shutdown Analyzer**
- Increased safety, via continuous and effective validation of shutdown systems and prompt detection of issues
- Reduced downtime, reducing planned shutdowns and using unplanned shutdowns for ESD/PSD validation
- Reduced time and effort for shutdown system audits
- Reduced extra personnel onsite for system validation, reducing risk exposure and transportation costs
- Historical validated record of shutdown systems operation for auditing with causes

**Safety Element Scout**
- Increased safety by promptly detecting failed operations and easily identifying elements requiring testing/maintenance
- Reduced downtime required for validation, reducing planned shutdowns and using unplanned operations
- Reduced time and effort for validation, reduced extra personnel onsite, transportation costs and risk exposure
- Historical validated record of safety operations

**SIL Reports**
- Increased safety, quickly identifying items requiring testing or maintenance
- Reduced downtime/deferrals, identifying SIF with high demand above limits and failure rates to take preventative actions
- Reduced time and effort for validation
- Historical record of SIL KPIs and reports for auditing and post-event analysis

Process safety cannot be overlooked and should be continuously monitored. Honeywell’s Process Safety Analyzer automates the process of validating shutdown systems and safety elements to ensure process safety.
regulations and standards like IEC 61511/61508, quickly spotting components needing testing or correctives to ensure their proper operation, keeping supporting data and reports for post-event analysis for auditing, towards best-in-class safety levels.

PSA includes three main modules:

- **Shutdown Analyzer** for validating shutdown and control systems
- **Safety Element Scout** for validating safety elements and safe operations
- **SIL Reports** for supporting SIL analysis

All PSA modules come with preconfigured views and reports, but are also configurable to adapt to user requirements. PSA can handle multiple facilities, and includes bulk configuration tools for facilitating deployment and maintenance.

**PSA Shutdown Analyzer**

The Shutdown Analyzer (SDA) module automatically detects, verifies and document that shutdown systems have performed as expected.

SDA detects shutdowns automatically and enables a cause and effect analysis at any time. It considers control overrides and checks for expected effects and their timing.

SDA online views include:

- Engineer View detailing shutdown levels, causes and effects, with clear flagging of issues
- Single Event View for a more simplified view
- Blowdown View for validating blowdown valves pressures pre/post shutdowns
- Cause Effect View to visualize the nominal cause and effect matrix for each shutdown

SDA reports include:

- Standard Report
- Blowdown Report
- Shutdown Hierarchy Report

Advanced shutdown checks are possible, including pressure validation pre and post shutdown.

Multiple filters provide analysis flexibility on views and reports, for any period of time.

**PSA Safety Element Scout**

The Safety Element Scout (SES) module tracks and validates proper operation of safety elements and the execution of safety operations.

Safety operations are continuously monitored, recorded and checked to validate they are occurring as expected; for example travel time to safe state checked vs. the maximum nominal travel time.

For captured shutdowns inspect details of causes, expected and timely detected effects, and more.

SDA provides online views for analysis, editing and commenting, and the ability to automatically publish reports for compliance and auditing.

SES online views allow visualization of valve operations history and filtering based on several criteria.
SES reports include:

- Failed Operation Report
- Failure Report
- Long Travel Time Report
- Not Operated Report
- Trend Travel Time Report
- Ok Operation Report
- Summary Report

Preconfigured reports are available including Trend of travel time.

PSA SIL Reports

The SIL Reports (SIL) module generates KPIs and reports to analyze safety critical equipment and determine need for testing or correctives.

The demand on safety instrumented functions and their performance is continuously checked to calculate KPIs are used on reports.

SIL online views include:

- Demand View to check and edit initiators
- Failure Rate View to inspect calculated failure rate for categories of final elements, view/edit estimations of failure rate and risk reduction

SIL reports include:

- Test Interval Report
- Failure Rate Report
- Demand Overview Report
- Demand History Report
- Final Element Verification Report
- Valve Stroke Test Report

Inspect historical SIFs demand rates and quickly identify which SIFs have a demand rate above the design limits.

PSA Solution Components

PSA’s main components include PSA Background Processes, PSA Online Application, PSA Reports, Bulk Load Utility and Debugging Tools.

PSA Background Processes periodically collects relevant events and analyze them against configuration to continuously check operation of shutdown systems and safety elements. It can also automatically publish reports.

PSA Online Application is accessible from a web browser. It allows users to access online views and, where applicable, edit, comment, conduct re-analysis and approval, as well as publish and visualize reports.

The PSA Reports is a collection of historical reports constituting a report warehouse using SSRS. The Bulk Load Utility is used for bulk configuration. The Debugging Tools are for event browsing, tag validation, asset configuration, shutdown configuration and more.

PSA Historian / Database / DCS Support

- PSA configuration and Event Journals are stored on SQL server.
- PSA connects to Honeywell’s Experion® and TDC 3000 control systems, as well as 3rd party control systems provided that required alarms and events are exposed via standard interfaces.
- PSA supports Honeywell’s Uniformance® PHD and major third party data historians.
Process Safety Analyzer Support Services
This product comes with worldwide, premium support services through our Benefits Guardianship Program (BGP). BGP is designed to help our customers improve and extend the usage of their applications and the benefits they deliver, ultimately maintaining and safeguarding their advanced applications.

Honeywell provides a complete portfolio of service offerings to extend the life of your assets and provide a cost-effective path forward to the latest application technology. Honeywell services include:

- Software installation services
- On-site engineering services
- Migration services
- Scope expansion services
- Assessment services
- Performance baseline and tuning services
- Customized training

Digital Suites
Process Safety Analyzer is a solution designed to support work processes towards safer processes and safer remote operations goals via the continuous/efficient validation of shutdown systems and safety elements in order to protect people, environment and assets.

Process Safety Analyzer is part of Honeywell’s Digital Suites. Honeywell is the expert, global source of consultancy, applications and solutions that can be tailored to the specific needs of each client. With more than 30 years of experience across oil and gas and other industries, clients choose Honeywell to improve safety and performance.

For More Information
Learn more about how Honeywell’s Process Safety Analyzer can improve safety, visit honeywellprocess.com or contact your Honeywell Account Manager.

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