PROCESS SAFETY ANALYZER

PRODUCT INFORMATION NOTE

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.

Introduction

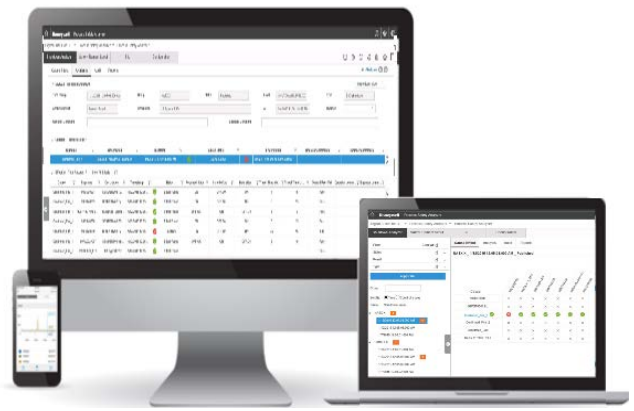
Despite the application of a wide variety of safeguarding measures, accidents in the process industries continue to occur, costing billions of dollars annually not to mention loss of life, environmental & reputation impact. Plant owners/operators must find ways to better understand the safety status of their assets and then act appropriately.

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

With the PSA solution, industrial organizations can prove to authorities and other entities that continuous validation is performed to essential process safety components. They can also promptly detect issues for faster action when necessary and capturing reports to prove proper operation.

Honeywell Forge Process Safety Analyzer enables customers to

- Automate tracking and validating the condition and operation of safety components to identify risk gaps on a shift or daily basis, so operating teams can fix them quickly
- Improves compliance with regulations and standards like IEC 61511 with minimal effort
- Detects safety-critical equipment due for test or needing repair
- Keeps supporting data and reports for post-event analysis



Honeywell's Process Safety Analyzer automates the process of validating shutdown systems and safety elements to ensure process safety.

- *Complete Shutdown Cause and Effect Analysis*
- *Final Element Performance Analysis*
- *SIL Analytics for Demand Rate Assessments*
- *Flexible Deployment - Fully On-Premise Model as well as a complete managed SaaS Offering*
- *Part of Honeywell's comprehensive Process Safety Suite to automate complete safety lifecycle management*

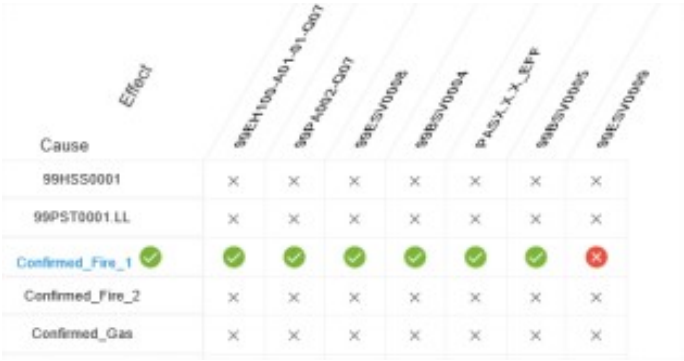
PSA includes three main modules:

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

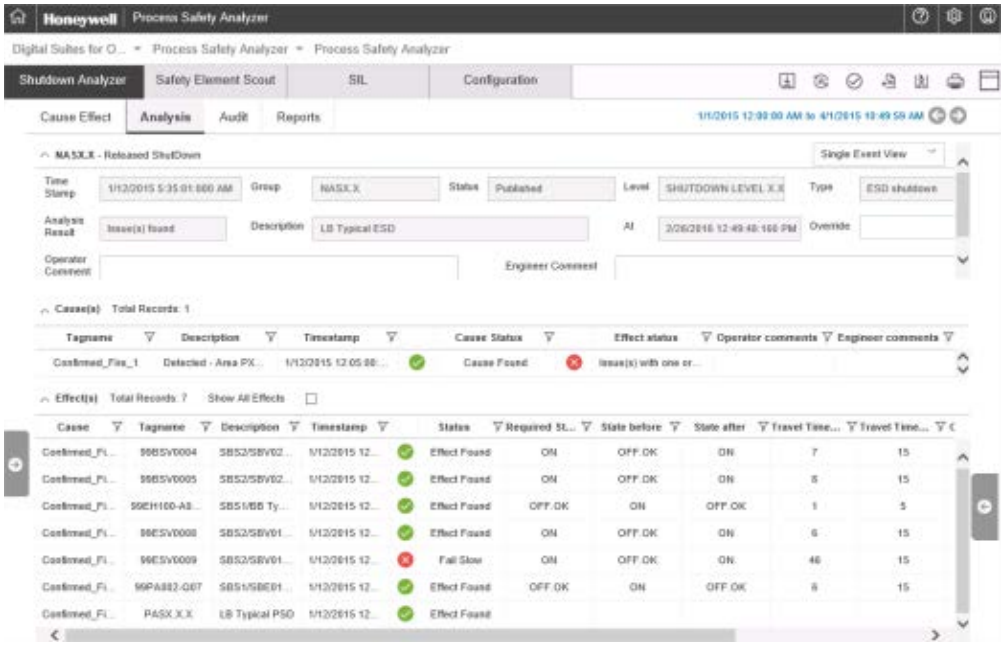
PSA Shutdown Analyzer

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.



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



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

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.

Shutdown Analyzer

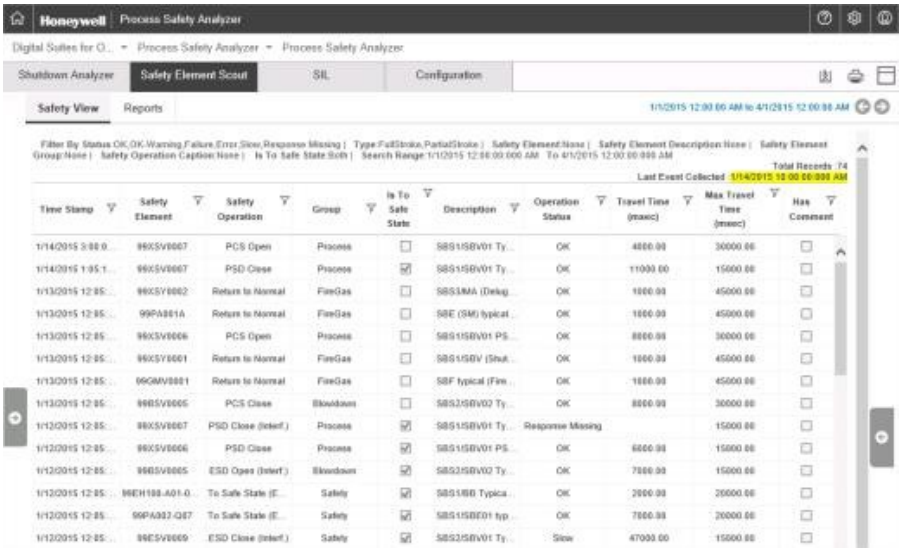
· Increased safety, via continuous and effective validation of shutdown systems and prompt detection of issues

· Reduced downtime, reducing planned shutdowns and using unplanned shutdowns for ESD/PSD validation

· Reduced time and effort for shutdown system audits

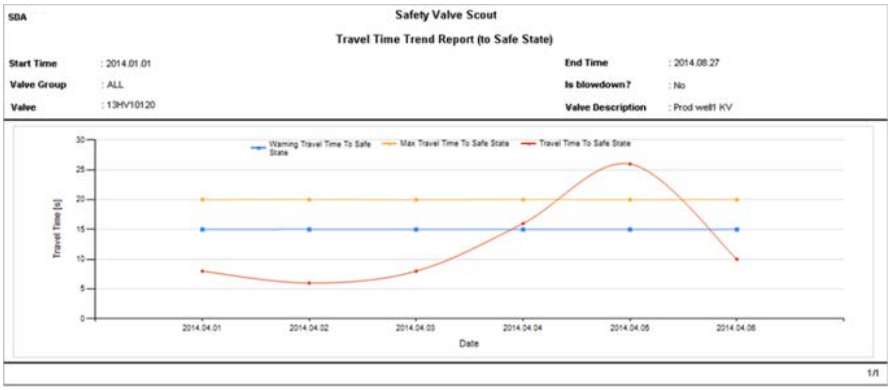
· Reduced extra personnel onsite for system validation, reducing risk exposure and transportation costs

- Historical validated record of shutdown systems operation for auditing with causes



All operations from final elements are captured and validated with details including calculated vs. expected travel time.

SES online views allow visualization of valve operations history and filtering based on several criteria



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

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*

PSA as a Managed Service Offering

For customers aiming to minimize on-prem systems and consolidate alarm management systems across multiple sites, Process Safety Analyzer is also offered as a cloud hosted solution and thereby providing the same proven benefits through Software as a Service (SaaS) offering.

SaaS Deployment model enables:

- Faster deployment times with reduced deployment complexity
- Remote access from any location by certified users
- Increased ease of Scalability – reduce complexity in enterprise deployment - connecting multiple sites into a centralized host
- Reduced hardware footprint on sites
- Reduced maintenance costs (resource and hardware)
- Pricing model flexibility – funded through OPEX

Integration with Process Safety Suite (PSS) Offering

Process Safety Analyzer is intimately integrated with Honeywell's Process Safety Suite (PSS) offering; a comprehensive solution that fully automates the process safety lifecycle, helping to reduce errors, lower costs, continuously monitor operations for hazardous conditions, and provide safety alerts in a timely fashion. ISA/IEC-61511 compliance is made easy and displayed in an easy-to-understand format.

The system compares important datasets—Hazard and Operability Studies (HAZOP), Layers of Protection Analysis (LOPA) and Safety Integrity Levels (SILs)—along with information from plant historians and Computerized Maintenance Management Systems (CMMS) and analyzes what should happen versus what does happen, looking for any gaps over the full process safety lifecycle.

- *Safety Workbench* consolidates all the Process Safety Suite tools, synchronizes the information for seamless transfer and revision control, and represents the single source of truth for process and functional safety data.
- Honeywell Forge Operations Safety Advisor (OSA) provides an easy-to-understand picture of your process safety risk as it stands today with visibility at site, division and enterprise level. Forge OSA collects information from your process Operations and Maintenance, then compares them with the risk analyses in your HAZOP and LOPAs to show how your plant is operating by comparing it with the ideal "Digital Twin for Safety" as laid out by your risk assessment teams.

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.

For More Information

Learn more about how Honeywell Process Safety Suite improves performance, visit https://hwll.co/ProcessSafetySuite, or contact your Honeywell Account Manager.

Benefit Summary

Improved Safety

- *Continuous validation, Early identification of issues*
- *Better awareness*

Improved Uptime

- *Faster restarts after unplanned shutdowns*
- *Reduced trips (unplanned, planned for validation)*

Compliance and auditability

- *Full HISTORY, post-mortem analysis*
- *Reports to internal & external stakeholders*

Efficient work processes

- *Automated Validation/Reporting, Exception based testing*
- *Better cooperation*

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Honeywell Connected Enterprise

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