Safe and secure process control in the chemical industry with Plant Historian AM - Alarm Management

From a documentation tool to a company-wide, centralised alarm management system according to EEMUA 191 und NAMUR NA 102

>> F A C T S

Since 2007, Plant Historian AM - Alarm Management - has been used by one of the largest producers of special chemicals in the south-east Bavarian region. The plant, with almost 900 employees, produces about 600 000 tons of chemical products per year.

Originally, all alarm messages from the various process control systems and controllers were printed out on paper using matrix printers or stored temporarily in a circulation archive. The documentation obligation for the growing number of alarms & events made more effective backup and archiving measures necessary. Plant Historian AM, which was initially introduced mainly for automated long-term archiving, developed into a company-wide central instrument for safe and secure alarm management.

>> Initial situation:

A wide variety of process control systems and controllers from different manufacturers such as PCS7, 800xA, ABB Freelance, ABB Symphony as well as Hima HIMAX and Honeywell FSC were used. Occurring error messages from the individual systems were printed out on paper. There was neither central message monitoring nor the possibility of centrally archiving or evaluating alarm frequencies or alarm durations.

>> OBJECTIVE: Long-term archiving and alarm management:

The first requirement was to set up an automated, sustainable long-term archiving system based on a manufacturer-independent platform that allows all existing systems from the various manufacturers to be integrated and displayed centrally - with the option of successive expansion into a complete alarm management system for the entire company.

>> Project objectives & requirements in detail:

- Automated central long-term archiving
- Paperless working
- Reductio of alarms caused by matrix printers
- Alarm reduction
- Central display of PCS and SSPS
- Flexible evaluation of alarms per operator station
- Generation of top 20 alarm overviews
- Identification of chattering and follow-up alarms
- Preparation of KPI meetings (weekly and monthly)

>> Technology requirements:

- Connection of 6 control systems and controls from different manufacturers with 16 PCS connectors
- Consideration of 40.000 I/O‘s
- Company-wide, central solutions
- Multi-user and multi-project capability, scalability, multilingualism and process control system independence
- Standardized (redundant) interfaces to the PCS/SPS world
- Robust industrial software – with remote access for maintenance / support measures

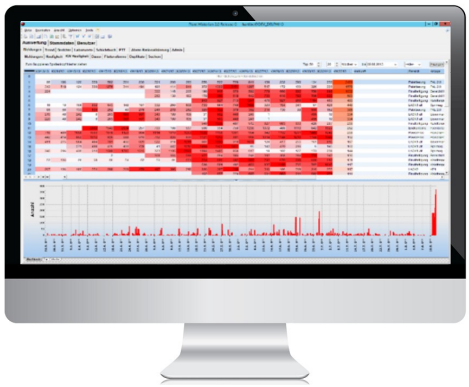

Fig. 1: AM frequency evaluation per calendar week

>> Decision for Plant Historian AM/AR:

Plant Historian AM was chosen because this solution offers ideal possibilities for long-term archiving. The different control systems and controllers are integrated and displayed centrally. The application is intuitive and user-friendly and - a key point - it is scalable without interfering with running operations. The latter proved to be an inestimable advantage in the gradual expansion to a company-wide, central alarm management system.

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>> Plant Historian AM offers:

- Central long-term archiving
- Central alarm & event (A&E) monitoring with linked procedural instructions
- Graphical A&E frequency evaluation and distribution (e.g. top 20 evaluation, evaluation by calendar week, evaluation of follow-up and chattering alarms)
- Duplicate recognition: display of alarms that occur several times within +/- 1 second
- Analysis/filter settings of alarms & events customizable for user profiles
- Automatic forwarding of alarms & events to digital entry masks, e.g. automatic error registration, shift book entry, SAP, etc.

>> BENEFITS:

By using the alarm management solution of iMes Solutions GmbH, the following benefits arise for the producer of chemical products in addition to the advantage of automated long-term archiving:

- Increased plant safety & transparency
- Optimized plant availability
- Support for alarm reduction
- Significant reduction of false alarms by reducing the workload of the system personnel

>> Conclusion:

Plant Historian AM - Alarm Management - provides companies in the chemical industry with an efficient, robust and transparent solution to increase plant safety and reduce the number of alarms.

Systematic alarm management with Plant Historian AM - Alarm Management - is equally suitable for small and large facilities. Company-wide solutions with more than 300 ser-

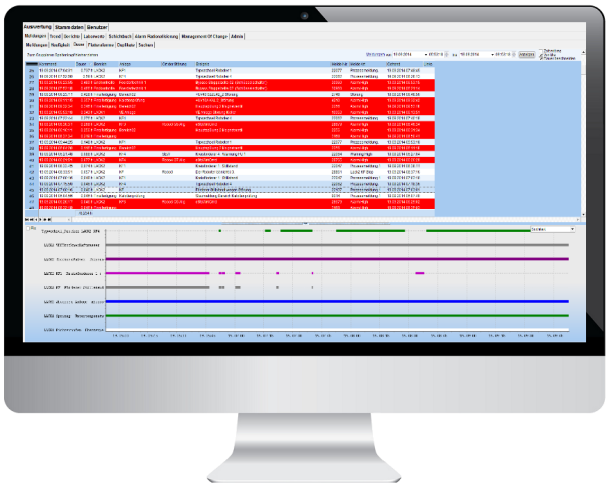

Fig. 2: Evaluation of alarm duration of selected messages