

Case Study

Honeywell Helps BP Reduce Nuisance Alarms and Prioritize Alarm Response



“Honeywell was a great partner throughout the project. They helped put a solid process behind the planning so we could prioritize and group alarms, eliminate duplicates and reduce nuisance alarms. Now operators have enough time to respond to actual events.”

- BP US Pipeline & Logistics



BP US Pipelines & Logistics turned to Honeywell for alarm management to audit the process and reduce nuisance alarms

Benefits

BP US Pipeline & Logistics recognized the need for an alarm management solution to remove duplicate alarms and audit alarm functionality at its Olympic Pipe Line Company.

The Olympic Pipe Line consists of over 400 miles of pipe running from the Canadian border to Portland, Oregon. The potential for alarms in such an environment is enormous, and controllers were inundated with more than 6,000 separate alarm tags. It was very difficult to trace tag origins for alarms, as historically different engineers had different philosophies of priorities and naming conventions.

BP US Pipeline chose Honeywell's alarm management software, to protect pipeline uptime by reducing the number of alarms that require operator intervention. Together, the companies revised and updated the written alarm management plan that would set priorities for alarm response, group alarms where applicable, and reduce alarms so only those requiring controller response were highlighted.

Additional benefits included:

- Reduction of alarms from a daily average of over 400 to a manageable 200 per day
- Determined the direction of all alarms and who should respond to them
- Eliminated erroneous alarms
- Constraint-driven alarm configuration management helped ensure alarms are always consistent with fundamental pipeline constraints
- De-cluttered the system and alarm summary page which included tags from decommissioned facilities
- Grouped like devices to simply rationalize and prioritize numerous alarms across the entire pipeline.

Background

BP Pipelines North America is a liquids, gas and chemical pipeline company in the US, transporting crude oil, refined products, natural gas liquids, carbon dioxide and chemicals from and to customers.

The Olympic Pipe Line Company, operated by BP Pipelines, North America, transports gasoline, diesel and jet fuel through an interstate pipeline system that includes 12", 14", 16" and 20" pipelines passing through highly populated areas. The pipeline is fed by four refineries and includes nine pumping stations and nine delivery facilities. The product is delivered to facilities in Seattle, Olympia, Vancouver and Portland, Oregon.

Challenge

Controllers at BP were concerned with the sheer number of separate alarm tags and a cluttered alarm display at its Olympic Pipeline facility.

In cases of equipment failure, startups or shutdowns, the operator had to search alarm annunciation displays and analyze which alarms were significant. This wasted valuable time when the operator needed to make important decisions and take swift action –there was too much data to manage efficiently.

Solution

BP chose Honeywell as its alarm management solution provider because of Honeywell's extensive experience in the oil and chemicals industries. Honeywell's alarm management software is vendor-independent which means it works with new and existing third-party control systems and applications as needed.

The first step in the process was documentation and rationalization to analyze the current alarm situation and develop a revised written alarm management plan. Goals for the documentation and rationalization process included:

- Major alarm reduction to highlight and actively manage only alarms requiring controller response
- Clearing the alarm summary page of all standing alarms
- Determining and implementing changes to the alarm process and pass along the ones that required system changes
- Developing an operator reference sheet with improvements as one process through the documentation and rationalization

Honeywell and BP analyzed the current alarm philosophy and developed a severity matrix to assess consequences of alarms and set priorities accordingly. There were over 6,300 tags to rationalize, including alarm tags from three prior SCADA systems. The alarm management documentation and rationalization process consisted of a two- week training period and included use of PLC design documents to aid the process.

BP began grouping alarms – placing them in 'buckets' by likeness. By grouping "like" devices, BP was able to use an Excel spreadsheet to rationalize and prioritize numerous alarms at once across the entire pipeline. This process also helped to guarantee continuity between tag naming conventions and descriptions. Grouping could help determine priorities, as well.

Many alarms that were classified as "child" alarms could be eliminated to favor the parent. In the end, grouping saved many hours of time and money for BP.

To date, the documentation and rationalization process is 89% complete – 5,600 tags have been assessed, the alarm descriptions have been completed and the system is generating discrepancy reports.

For More Information

Learn more about Honeywell's alarm management solutions at our website www.honeywellprocess.com/software or contact your Honeywell account manager.

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