Putting plant operators back in control

Due to the growing processing capacity of automated systems, the number of alarm calls in power plants has exploded. Many less-than-vital alarm features have been added, resulting in operators unable to reasonably handle the number of alarm calls. Alarm floods and cryptic alarms can hinder operators from taking the right decisions. By bringing the number of alarms back to a reasonable and manageable level, plant operators can regain control.

- Laborelec provides a step-by-step approach with Intelligent Alarm Management (IAM), resulting in higher quality alarms and fewer alarm floods.
- This will have an immediate and positive effect on the plant’s safety, profitability, and environmental performance.

Laborelec’s IAM services are dedicated to all GDF SUEZ power plants, independent of the Distributed Control System they use. Out of a set of seven basic steps, a customized service is worked out for each power plant. This can be anything from a quick scan to a complete programme aiming for EEMUA 191 compliancy.

Expertise in alarm management and power plants united

EEMUA 191 guidelines provide clear and objective quality benchmark figures for any kind of alarm system. Laborelec can develop new or enhance existing alarm systems for EEMUA 191 compliancy by making use of the PAS method and software tool. The PAS methodology is recognized as best practice by ISA and EPRI. The co-operation between PAS and Laborelec has proved successful - PAS brings in expertise on alarm management and analytical software while Laborelec has knowledge of the power production process.

IAM for new power plants

Laborelec can create a solid base for IAM in the design phase of a new power plant. It establishes a high quality Alarm Philosophy that complies with the new plant’s operating strategy. The result is monitored and benchmarked against the pre-defined Key Performance Indicators (KPIs) during implementation and commissioning.

"Users no longer have to acknowledge a multitude of complete alarm pages."

Analyses reveal the number of alarms per hour.
The Intelligent Alarm Management of Laborelec and PAS contains the following seven steps, out of which a customized service for each power plant is composed:

- **Step 1: Alarm philosophy**
  An alarm philosophy is worked out that defines plant-specific KPIs based on EEMUA 191.

- **Step 2: Benchmark alarm system**
  Your alarm system is benchmarked with generic or plant-specific KPIs. The performance level of all your alarms is classified, enabling a set of Bad Actors to be defined.

- **Step 3: Bad Actor resolution**
  Recommendations for improvement are made for each Bad Actor. Reductions of up to 50% in the number of alarm calls are possible with this step, even though the alarm configuration database remains unchanged.

- **Step 3A: Continuous alarm system evaluation**
  If you prefer to restrict the IAM to step 3, step 3A aims to consolidate the existing quality level. On a regular basis, Laborelec checks the alarm system’s data set of the previous period, benchmarks it against the KPIs, and gives recommendations.

- **Step 4: Documentation and rationalization**
  Step 4 aims to bring the complete alarm set in line with EEMUA 191 guidelines and Alarm Philosophy. To do so, Laborelec indicates misconfigurations and gives advice on how alarm priorities, settings, and naming conventions can be improved.

- **Step 5: Audit and enforcement**
  Active auditing and enforcement of the configuration guarantees that the Master Alarm Database configuration is kept at the quality level obtained in step 4 at all time.

- **Step 6: Real-time alarm management**
  The outcome of Step 4 is once more benchmarked against the KPIs. If required, a real-time, state-based alarm control system is introduced, including alarm flood suppression and alarm shelving.

- **Step 7: Control and maintain**
  A structured approach towards IAM is integrated into the procedures of the Operations and Maintenance department (MOC). This enables a sustainable IAM, despite processors and sensors changing over time. This organizational step results in long-term EEMUA 191 compliancy.