PROCESSVUE
Alarm Management Without Limits

Premier Oil
Case Study

ProcessVue Alarm Management is 100% Reliable at Premier Oil

By replacing their sequence of events (SOE) system with ProcessVue software, Premier Oil's Balmoral facility has experienced zero software outages since it was installed. The 100% reliability of ProcessVue ensures that data from safety-critical plant is always logged, enabling engineers to identify the cause of a plant upset, including the sequence of events leading up to this.

Premier Oil is an oil and gas exploration and production company that owns interests in nine producing fields in the UK. The Balmoral facility in the Central North Sea area is a purpose-built, semi-submersible floating production vessel (FPV). Installed in 1986, the FPV mooring system consists of 8 adjustable-tension anchor chains attached to piles. The topside facilities include fluid separation and processing facilities, power generation, gas compression and living quarters for more than 100 staff. Maximum design throughput of the FPV is around 60,000 bbl/day oil production and 90,000 bbl/day produced water handling. The FPV has no oil storage capability and oil is exported to Cruden Bay via a 14km pipeline (Brae-Forties link) and overland to Hound Point.

Lee Hanlon, Instrument and Controls Engineer at Premier Oil North Sea, was also project lead for the ProcessVue implementation at Balmoral. He commented: “We have lots of safety-critical plant and equipment, as well as thousands of individual instruments installed across the Balmoral FPV. Event and alarm data from these instruments needs to be logged on a continuous basis. The sequence of events leading up to a failure or plant shutdown need to be recorded, so that we have 100% traceability at all times. If anything unforeseen happens, our personnel need to be able to quickly identify and analyse the root cause of the events that triggered an alarm.”

Safety-critical events

The alarm management system is required to collect data from six separate sub-systems across the Balmoral FPV. These include DCS, Fire & Gas, Subsea, ESD, HVAC and Marine systems. In total, around 30,000 alarms and events per month need to be recorded by the software across these sub-systems. An example, says Hanlon, is the need to monitor the movements of a set of process valves that need to open and close in a certain sequence.

According to Hanlon, the previous alarm management system was “too unreliable” and suffered from regular outages. “Perhaps two or three times a year we experienced a software outage, which was too many for a facility like this,” he explains.

Hanlon therefore searched for an alternative alarm management system. After discovering ProcessVue, MAC Solutions (and several other software vendors) were invited to tender for the project. ProcessVue was selected as the preferred choice of software, primarily due to three factors: its ease of use, expandability and the software’s track record in other energy and utilities installations.

ProcessVue is a suite of software from MAC Solutions that provides clear, relevant and prioritised information to plant operators, supervisors and managers, enabling them to make better-informed decisions about their processes and plant safety. The software combines the latest communication, data logging and reporting technologies with more than 30 years’ experience in design and implementation of Alarm Management and Printer Replacement software. ProcessVue can be used as a standalone application or to bring together multiple disparate systems onto one common platform.

ProcessVue on Balmoral

“We asked MAC Solutions to install ProcessVue over a very short timeframe on Balmoral,” explains Hanlon. “We couldn’t afford to be without an SOE Printer system, so speed of installation was critical. To our delight, MAC Solutions installed a new server, configured the ProcessVue software to our exact requirements, and commissioned and tested everything within three days.”

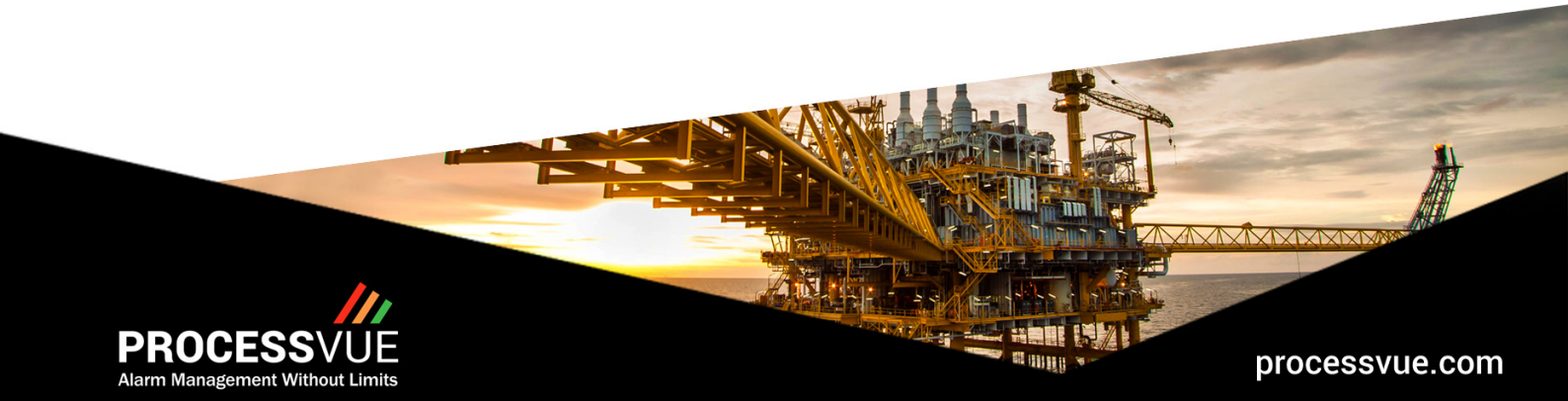
MAC Solutions also provided on-site training during this period. As Hanlon states: "ProcessVue is used by 8 to 10 personnel on Balmoral and all of us, including myself, found ProcessVue to be self-explanatory and easy to navigate. We can access and retrieve information quickly and easily. The software is so easy to use that it requires very little training as it is Windows-based and therefore has a very familiar look and feel. Ease of use is critical for us because the average age of personnel in the North Sea is 50-plus, so we need to ensure that they are 100% comfortable with any new software or hardware that we ask them to start using."

"ProcessVue also gives us a vast amount of options when it comes to filtering event and alarm data. For example, we can filter the SOE list by Tag, Priority, Area or Package. We can search for any tag or time stamp and filter this information in order to pinpoint specific events. The software has become a key tool in enabling us to identify the root cause of events, thereby helping us to investigate and report on these events to other parts of our organisation. The fact that we've had no software outages demonstrates what a great job MAC Solutions has done for us and how reliable the software is."

MAC Solutions has also implemented an additional ProcessVue software module at Balmoral. ProcessVue Analyser is a business intelligence software module that offers a wide range of high level reporting features, including event reporting, frequency analysis, standing and chattering alarm reporting, operator response times, and customised reporting. The Analyser Web Client enables the presentation of EEMUA alarm-based KPIs through dashboards.

Software to EEMUA 191 Guidelines

A properly managed alarm system is now a critical, integral part of any production or process manufacturing facility. Since its establishment in 1991, EEMUA 191 has become the globally accepted standard for good practice alarm management. ProcessVue reporting is based on EEMUA 191 guidelines.



To establish an alarm management system based on these guidelines or to ascertain if a current system is operating effectively and within the guidelines, alarm data must be collected and analysed on a continuous basis. Just collecting this data can be a challenge in itself. Bringing this data into a usable format for Control Room Operators and reporting on this data to Alarm Managers are two critical functions.

Features within ProcessVue include advanced KPI reporting based on EEMUA 191 guidelines; alarm rationalisation (locating 'bad actors' and 'nuisance alarms'); Sequence of Event and real time display in web browser; alarm system benchmarking; alarm and event analysis; and alarm and event archiving.

As Hanlon concludes: "ProcessVue is an ongoing project here. Whilst we now have a solid foundation of data recording and alarm management, we are building on this and rationalising the number of alarms and events that we receive on a daily, weekly and monthly basis. By implementing ProcessVue Analyser, we can identify and filter out any 'bad actors' or 'nuisance alarms'. This allows us to focus and react quickly to only those alarms and events that we deem as being safety-critical or production-critical. We can also benchmark ourselves against specific KPIs that we set up based on EEMUA 191 guidelines."

Let’s talk

We’re here to help

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