

Success Story

Increasing Human Performance and Reliability through OTS Development and Training for Operational Excellence and Improved Plant Operations

PetroVietnam Ca Mau Fertilizer JSC

Location: Ca Mau, Vietnam
Order date: April 2017
Completion: August 2018
Industry: Chemical (Fertilizer), Oil & Gas, Renewable Energy



Executive Summary

PetroVietnam Camau Fertilizer JSC (Joint Stock Company) produces and trades in fertilizers for agriculture and oil and gas industries in Vietnam. Based in Ca Mau, Vietnam, it offers its products under the Dam Ca Mau-Gold Season Seed brand name. Since its inception in 2016, PetroVietnam Camau Fertilizer Company (PVCFC)'s vision has been to become the leading enterprise in Vietnam and the region in the sector of producing and trading fertilizer and chemicals serving agriculture and the oil and gas industry. Not only does the plant help change the agricultural economy structure in the Mekong Delta, it also contributes to the enhancement of productivity, quality, efficiency, and competitiveness of the Vietnam's agriculture sector. This project was secured in April 2017 after three years of budget planning and was implemented within 16 months as scheduled. Yokogawa provided support by designing, developing, implementing, and testing the operator training simulator (OTS) in 3 areas of the plant: ammonia, urea and utility.



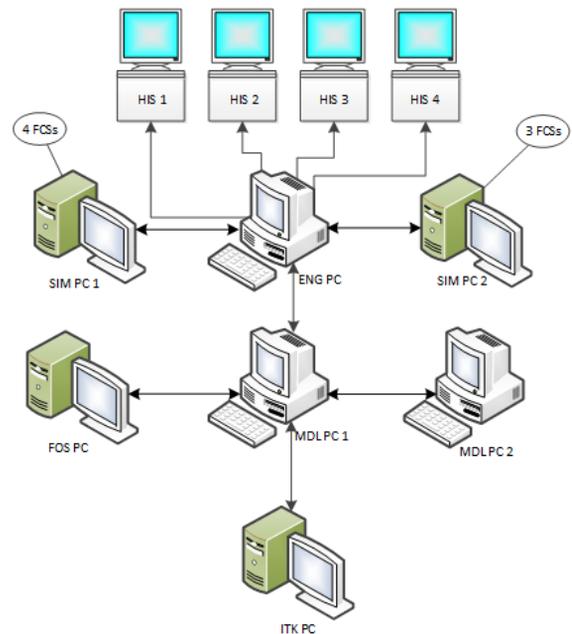
PetroVietnam Ca Mau Fertilizer JSC OTS training room

The Challenges and the Solutions

PVCFC was on a mission to implement solutions aimed at maintaining and developing sustainable and efficient production. However, challenges arose due to a variety of issues faced by the relatively young plant. Human resource and reliability issues was a key concern, as the team of engineers working at the plant was quite young and lacked real-world plant operation experience. Coupled with the annual scheduled plant

shutdown, it was a struggle even for the existing engineers to remember their operating procedures, let alone the newly recruited engineers that required extensive training to increase their process knowledge before they were confident enough to operate the actual plant.

With an integrated control and safety system delivered for the plant from different vendors, the customer had challenges implementing an OTS system on their own. The PVCFC team struggled with reconciling the systems and decided that the best way forward was to search for an experienced solution provider that could help them get an OTS system up and running to ensure safe and efficient operations as soon as possible. During their search for a suitable vendor, many reputable solution providers were put into consideration, but Yokogawa was able to convince PVCFC with our OTS expertise and proven track record and the OTS project was awarded to Yokogawa.



OTS Architecture



With Yokogawa’s understanding of the importance of OTS development and adequate employee training, the key objective was to facilitate training for less skilled operators and refresh the skills of experienced operators to instill confidence and prevent occurrence of disasters while improving plant productivity and efficiency. Aside from standard testing procedures, Yokogawa provided additional support for Pre-MAT (Model Acceptance Test), MAT and Pre-FAT (Factory Acceptance Test) at the OTS Engineering Centre as per the customers’ request. Despite the additional resources and time required, Yokogawa was able to give full support to PVCFC and managed to adhere to the timeline without any delay. As testament to the project’s success, PVCFC engineers are constantly utilizing the OTS to train and refresh engineers and the training room has operating at full usage since the project’s handover. After implementation, a total of 66 operators have been trained, with an additional 60 from a new plant.

With the OTS implementation, training time is shortened, and the cost of manpower training is reduced considerably. Not only did PVCFC report an overall increase of 20% for risk mitigation and noted a significant reduction in errors caused by human factors, they also shared that the response precision rate of the OTS compared to the actual plant is an impressive 90%. Through a company internal survey, the company also reported a 30% increase in staff morale and confidence.



The PVCFC and Yokogawa team

The implementation resulted in successful prevention of 2 issues that could have caused a plant shutdown, and staff have also reported that they were able to manage the start-up and shutdown of the plant more smoothly, while being more confident in managing running parameters of the plant. As the OTS training is

intuitive and identical to the actual plant, the operators were able to respond quickly to the plant upsets and were always prepared for both planned and un-planned shutdowns.

Customer Satisfaction

Through close collaboration and a long-standing relationship with PVCFC, Yokogawa is proud of having successfully secured the first OTS project in Vietnam and performed the best of our capabilities. The efforts put forth by Yokogawa led to a smooth partnership between PVCFC and Yokogawa team, helping the organization overcome difficulties and successfully achieve its business and production targets. Certainly, it was only with the support of the proactive and dynamic PVCFC team that Yokogawa was able to work together and pave the way for the company to take continued steps towards success.

After the successful project handover, PVCFC was very satisfied with the system implemented and expressed deep appreciation for Yokogawa’s support. To quote Mr. Dang Quang Hung, Maintenance Division Manager, “We really value Yokogawa’s full support for the OTS project. We’re very happy and satisfied with the system. On behalf of the PVCFC team, we really appreciate that Yokogawa gave their best to help achieve our three criteria: service and product quality, adherence to project schedule, and greater cost savings.”

For more Information and Contact

[Operator Training Simulator](#)
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