

Case Study

Atlantic LNG Forges New Ground and Increases Optimization with Honeywell Advanced Process Control Solution



“When I think of Honeywell I think of solutions that improve both efficiency and reliability. Honeywell emerged as our preferred vendor of choice because of its direct LNG experience and expertise in that field. Honeywell’s suite of products helped Atlantic LNG both stabilize operations and enhance our production.”

Dawn Beekee, Instrument and Controls Engineer, Atlantic LNG

Benefits

Atlantic LNG Company of Trinidad and Tobago has four liquefied natural gas (LNG) trains at its facility that have been successfully commissioned and operational. However over the years, multiple modifications were made to the trains to optimize production to fully utilize the basic and advanced regulatory controls available on the DCS. As part of a recent strategic initiative, Atlantic LNG realized the need for more sophisticated technology such as Advanced Process Controls (APC) on its trains. As the first plant to implement an APC system on an LNG plant utilizing the ConocoPhillips Optimized Cascade Process, Atlantic LNG turned to Honeywell’s APC solutions to stabilize operations, increase efficiency, reliability and production.

Atlantic LNG called upon Honeywell to help develop an action plan and implement the APC project resulting in the following benefits on Train 1:

- Increased accuracy and reliability of information
- Operators able to maintain stable targets and improve production rates via plug and play testing with Profit Controller
- Hands-on testing and analysis provided little disruption to plant via use of Profit Controller models and real-time analysis before trains commissioned and optimal limits maintained
- Increased reliability of trains by troubleshooting diagnostics as needed with gas availability guaranteed and trains operating at normal full rates



Atlantic LNG Company of Trinidad and Tobago uses Honeywell APC solutions to increase production and optimization.

Background

The Atlantic LNG Company of Trinidad and Tobago was formed in July 1995 to develop a liquefied natural gas plant in Point Fortin, Trinidad and Tobago. The venture links together one local company, NGC - National Gas Company of Trinidad and Tobago (Government owned), and four other companies bringing extensive international experience in the natural gas industry: Amoco Trinidad (LNG) B.V., British Gas Trinidad LNG Ltd., Repsol International Finance B.V. and Cabot Trinidad LNG Limited. Amoco’s shareholding is now held by BP Trinidad (LNG) B.V. and Cabot’s by Suez (Trinidad and Tobago) LNG Ltd.

The plant is located at Point Fortin, on the south-western coast of Trinidad, the larger of the two islands that form the Republic of Trinidad and Tobago. The administrative office is in Port of

Spain, the capital city. Trinidad and Tobago are the southernmost islands in the Caribbean Sea.

Atlantic LNG is a liquefied natural gas operating company generating value for shareholders, employees and communities in which they operate. The company is dedicated to the safety of its people and operations and driven to succeed and continually improve, highlight safety of people and operations.

Challenges

As part of a strategic initiative Atlantic LNG looked to improve its reliability and operational efficiency. Tasked with that challenge, the plant knew it needed to modernize its facility and LNG trains.

In order to upgrade the technology, Atlantic LNG investigated advanced process controls and looked at Train 1 to see if any benefits could be provided by the use of APC. The plant looked to enhance production on two product streams – LNG and NGL – and commenced with a benchmark study on Train 1.

“We wanted to forge new ground with the implementation of a new APC system to help Atlantic LNG optimize its production and needed to select a partner that could take our APC building blocks and arrange them in a way that would help ensure reliable and safe operations and simultaneously increase our production,” said Dawn Beekee, Instrument and Controls Engineer, Atlantic LNG.

Solution

As the first plant to implement an APC system on an LNG plant utilizing the ConocoPhillips Optimized Cascade Process, Atlantic LNG conducted a search of partners and invited five to present. Based on the report that came back and the company’s analysis tree, Honeywell emerged as the preferred vendor because of its LNG experience, domain expertise and assigned personnel.

More Information

For more information on Honeywell Enraf Solutions or any of Honeywell’s Products, Services, or Solutions, visit our website www.honeywell.com/ps, or contact your Honeywell account manager.

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“We turned to Honeywell’s APC solutions to help stabilize operations, increase efficiency and reliability and achieved success in doing so with Train 1 because of the success of our benefits study, economic results and personnel that Honeywell assigned to the project,” continued Beekee.

As part of the process, Atlantic LNG went through a planned workflow approach with Honeywell that included the following:

- Kick off meeting to define scope and expected outcome, schedule, resources needed and cross-functional assigned team
- Pretest to identify instrumentation, tuning and process issues; step-sizes for formal step-testing and verification of suitable proposed control strategies
- Preliminary design which included introduction to Profit Controller’s matrix and objectives providing safe and stable operation and maximized both LNG and NGL streams
- Model ID generated models for controller onsite at Honeywell facility
- Simulation of off-line version of controller using a test DCS system and built and tested new control strategies that accompanied controller
- Detailed design with additional operations personnel introduced to assess controller and ability to simulate controller and view interface
- Commissioning and extensive operator and maintenance training with procedures developed and guides and manuals prepared
- Acceptance which included a 14-day period of controller optimizing at least 97% of time, optimal limits maintained, gas availability guaranteed and trains operating normally at full rates
- Performance report generated using acceptance test data, that highlighted increased throughput and production

Atlantic LNG plans to continue to take advantage of Honeywell’s advanced process controls by benchmarking Trains 2 and 3.. Concluded Beekee, “Atlantic LNG learned from the benefits study and with Honeywell’s help of a dedicated project team we were able to meet deadlines, conduct extensive operator training, and establish best demonstrated practices during commission and acceptance phases all with no operational upsets and minimal product losses – ultimately achieving our sought after strategic objective of reliability and operational efficiency.