

# Grassroots LNG Plant Increased Availability and Optimized Project Cost with Vortex Technology

## RESULTS

- Increased plant efficiency and LNG train availability leading to maximize profits.
- Saved about \$120,000 USD per LNG train on overall project cost.
- Reduced maintenance cost.



## APPLICATION

LNG (Liquefied Natural Gas) train (natural gas compressed by refrigeration to a temperature of -180 °C)

## CUSTOMER

A Global EPC Company with project located in Australia

## CHALLENGE

Achieving production targets and maximizing profitability are some of the major concerns of gas processing facilities. For this turnkey plant builder, a global EPC Company constructing a Grassroots LNG facility, any downtime during the initial operating period is critical in meeting their targets. They need to ensure that they design and manage the LNG plant as efficiently as possible.

To achieve efficiency, measurement systems need to be accurate and reliable. Traditional vortex flowmeters have sensors that are wetted in the process. Performing maintenance on the sensor requires that the meter not be exposed to live process pressure. This means, the train must be shut off to do maintenance work. The best practice is to provide critical (non-intermittent) meters with isolation valves or bypass piping in order to allow for in-line repairs.

If a traditional Vortex flowmeter were to have an on-line sensor failure, the plant needed to close isolation valves up and downstream of the unit, effectively losing production of LNG at a rate of greater than \$40,000/hr. The average time to isolate one unit and remove and replace the sensor is about an hour. This doesn't include maintenance cost and material cost of the repair. In addition, the engineering company and their partners will miss the LNG production market value and miss their contracted production milestone due to production delays. The estimated profit from a day of LNG production is \$1 Million/day (based on 2009 pricing).

*By implementing the CriticalProcess™ Vortex (CPA) option, this global EPC company has been able to reduce the cost induced from isolation valves by greater than \$120,000 USD per LNG train.*



*An installed Rosemount 8800 Vortex flowmeter combined with the CriticalProcess™ Vortex (CPA).*

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### SOLUTION

With the unique non-wetted sensor design of the Rosemount 8800 Vortex flowmeter combined with the CriticalProcess™ Vortex (CPA) option, sensor repair can be done online without requiring process isolation of the unit. This allowed for savings in all material, engineering, and installation costs of the upstream/downstream isolation valves as well as LNG production value.

By implementing the CriticalProcess™ Vortex (CPA) option, this global EPC Company has been able to reduce the project cost induced from isolation valves or bypass piping, by greater than \$120,000 USD per LNG train. It also gave them the ability to troubleshoot and perform maintenance on the Vortex flowpoint without shutting down the process leading to maximize profitability, process efficiency, and maintenance cost savings.

### RESOURCES

#### Emerson Process Management Oil and Gas Industry

<http://www2.emersonprocess.com/en-US/industries/oil-gas/Pages/OilandGas.aspx>

#### Rosemount Vortex Flowmeters

<http://www2.emersonprocess.com/en-US/brands/rosemount/Flow/Vortex-Flowmeters/Pages/index.aspx>

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