

Client – Queensferry Refurbishment

Location – Queensferry WWTW



The refurbishment of the digesters at Queensferry WWTW began in 2016 when Marches Biogas undertook a review of the site which had been in near-continuous service for over 30 years.

Marches Biogas carried out a HAZOP assessment and design review of the site and produced a full suite of mechanical and process drawings (P&IDs) for the plant, as well as safety procedures for all work to be completed as part of this project. The main improvements made to the digesters were:

- The digesters were emptied, de-gritted and cleaned
- The gas space was blasted with a protective coating to prevent further degrading
- New rotary port gas mixing system was installed to deliver vigorous mixing throughout the tanks
- Gas pipework modifications were made to improve safety and biogas flow
- A de-gritting system was fitted for use during digester operation
- Feed pipework modifications were made to improve flow and thermal distribution within the tank
- A diverter valve was installed on the existing heat exchanger to improve control

The plant has two primary digesters therefore the worked was planned so that one digester was refurbished at a time that allowed the other to remain in service. Once the works were complete, the contents of the digester was 'hot swapped' to the other tank over the course of several days, allowing the newly modified digester to be recommissioned and the second digester to be refurbished. Marches Biogas carried out the purging, decommissioning and recommissioning of the digesters, with the clean out undertaken by Celvac.

The refurbished of the plant has been a great success. The process is now able to cope far better with the varying operational demands of the Waste Water Treatment Work with the overall gas production for the site is now around double that of the site before the remedial works were completed.



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