



CASE STUDY

Novera Energy – Jenbacher LFG generator overhaul

Key Parameters: Complete project within programme shutdown period

Date: April 2008

Project Description/Specification

GSE were contracted by Novera Energy Ltd, to provide technical service support to facilitate a major 10,000 hour scheduled overhaul of a landfill gas powered Jenbacher generator at the Daneshill landfill site in Nottinghamshire.

The landfill site provides renewable energy to the National Grid via the continuous running of three Jenbacher generators on a mix of site produced methane and CO₂ gas. The basic composition of the Landfill gas generated by the site is a high sulphur based deposit, which gradually decreases performance of the engines. To maintain high efficiency, service schedules are completed at key hourly stages, where disruptive and costly generation downtime is kept to a minimum.

Over a four day shutdown period, an overhaul specification was undertaken that included removal of cylinder heads, pistons, connecting rods and cylinder liners. The scheduled replacement of cooling water pump and crankshaft damper was also carried out. A rolling stock of overhauled components was able to be utilised to rebuild the engine. Any used components were returned to Novera Energy's workshop for overhaul. The only original parts re-used were the connecting rods, which had to be split for the piston, with reconditioned pistons refitted.



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All new components were supplied by the customer including: bearings, reconditioned parts and seal kits.

Incorporated within the scheduled service of the generator was an in-situ resealing of the engine sump. This required the entablature to be split from the sump, then both components cleaned and resealed. On completion of the rebuild, the generator was tested prior to being reinstalled onto the National Grid.

Continual service support is ongoing with Novera Energy, with GSE providing 24 hour call out service support along with specialised machining facilities. Recent projects have included re-skimming of cylinder head flame faces to recondition sealing surfaces with precision machining of valve pockets to accommodate oversize seats. Along with surface grinding of oversize valve stems and manufacturing of special tools, used in Novera engine workshop.

