

2.5MW CENTRAX Gas Turbine Generator

Complete Gas Turbine Generating system. Was installed at a Major Facilities site (Gas Liquefaction) in South Wales as a "Black Start" unit in 1981.

Used as Standby only.

Serviced by Centrax from new. Last serviced in 2008 when the system was moth-balled.

Total running hours: 1546

Centrax 350

Serial no: 3501 (November 1981)
Nominal Rating: 2500kW @ 15°C (sea level)
Fuel: Natural Gas (LCV 34.47 MJ/m³)

Turbine : Allison Gas Turbine

Assembly No: 9-501-0145
Serial No: ASP-879
Engine Model: 501-KB
Oil spec: EMS-35

Alternator : Brush AC Generator

3125 kVA (Panel mounted AVR)
1500 RPM
11,000 Volts / 3 phase
164 Amps
Machine no: 31874A1G
Rating: CMR
Frame: BEJ5511144/4
Exciter -Frame XP63.8/24 Machine no: 31874A1E

Gear Box : Allen Gears Planetary

Type: X5/41012
Serial: 1
Size: APG 23
Rated power: 3860KW
Gear box ratio: 9.473
Input: 14210rpm
Output: 1500rpm

All mounted on to a composite Heavy Duty Fabricated Channel steel section Base.

Associated equipment /services (off skid)

Hydraulic Starting System with Volvo 6-cylinder Diesel Engine
Lube oil cooling system
Air Intake and Extraction System
Black Start Battery Charging panel and Batteries
Control and Control logic panel for Turbine/Alternator with Alarms and Pre-Trip Alarm Annunciators
Synchronising Control Equipment
Fuel System including final pressure control and filtration
Serco Control Switches
Purging system
Neutral/Earth breaker panel
Gas Detection and Protection
Fire Detection and Protection
Generator room Temperature control panel

Background

The entire Gas Liquefaction plant was closed in 2008 following the advent of the gas supply deal with Qatar.

This Centrax Generator was the second unit manufactured by Centrax (Newton Abbott) Ltd. The 501 unit became the standard configuration for the Centrax 2.7~3.5MW models. As such, this unit is considered to be under-rated. This unit was installed as a Standby. Potentially lifespan is reckoned to be 25,000 to 30,000 running hours before major overhaul/service works.

The cost of a similar sized unit in 2011 was circa £1,100,000