



## WIND TURBINE JACKING & LEVELLING OPERATION

**HEAVY DUTY JACKING SYSTEMS** SYSTEMS & PERMENANT FLAT JACKS

# CONTRACT SERVICES - HIRE - SALES

### PROJECT DESCRIPTION

As part of a major construction repair and remedial project. Hydra Capsule were awarded the contract to design and install a temporary hydraulic jacking system with an inclusion of permanent flat jacks and a structural monitoring throughout the jacking operations. For lifting a total of 7 number turbines and levelling in accordance to the design / build specification.

The turbines ranged from 245 tonnes to 350 tonnes and consisted of a range of different jacks to suit the turbine restraints.

Each turbine had a tolerance of 6mm tolerance accuracy. Ranging between 30 and 80 number jacks per turbine.

**“Complete synchronised jacking of 360 number jacks. Levelling of turbines ranging from 28 to 42mm out of tolerance to 1 to 2mm mm accura-**



### PROJECT WORKS

Due to each turbine being installed and “live” Hydra Capsule needed to use different jacking system(s) to suit the applicable turbine due to weight, wind and height (upto 160 metres) restraints.

All hydraulic and flat jacks were interlinked as sets to allow a synchronised lifting operation. All jacks be electronically controlled to a central control unit and movement was monitoring using vertical LVDTs sensors and integration of a digital tilt sensor to measure the x and y axis.



In addition, Hydra Capsule were contracted to carry out flat jack(s) grout transfusion operations for permanent installation. The works were completed under “live conditions”. Monitoring movement, pressure / load continuously, With accuracy of 0.25mm.

Once the works were completed, the new permanent concrete plinth was poured to support the turbine for the next 15 to 20 years.



## PROJECTS

[www.hydra-capsule.com](http://www.hydra-capsule.com)

### Client

Electric Energy Supply Contractor

### Type of Works

Hydraulic Jacking  
Synchronised Control Systems  
Temporary Jacking System  
Flat Jacks & Permanent Grouting  
Consultancy

### Commence Date

February 2013

### Completion Date

March 2014



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