

## BELZONA REPAIRS WIND TURBINE SHAFT IN PLACE

### CUSTOMER

West Texas, USA

### APPLICATION DATE

December 2011

### APPLICATION SITUATION

Wind Turbine Shaft on Wind Farm

### PROBLEM

The shaft in this wind turbine at a wind farm was not grounded properly causing electrolysis damage. The damage was considerable and was destabilizing the turbine.

### PRODUCTS

Belzona 1111 (Super Metal)

Belzona 9111 (Cleaner/Degreaser)

Belzona 9411 (Release Agent)

### SUBSTRATE

Carbon Steel

### APPLICATION METHOD

The application was carried out in accordance with the Belzona System Leaflet FBC-13. A brass cast former was made to the exact dimensions of the shaft repair.

### BELZONA FACTS

The Customer was very pleased that the Belzona solution offered prevented them from taking the turbine apart and bringing it to the ground. Two other options were considered originally: 1. Call a crane company and replace the generator shaft. Cost - \$300,000.00 2. Call a crane company, lower the generator, ship it to a shop and repair by welding (Includes stress relieving, and straightening). Cost - \$275,000.00. Additionally, both options would have caused a downtime of 2-3 weeks. Cost of application, including labor, \$5000 brass reusable former, Belzona 1111 x 2kg, Belzona 9411 and Belzona 9111 - \$10,000. The method is now standardized over the energy company's wind farms and the contractor has 10 different size formers (all reusable) for the different size shafts that they have repaired with Belzona. By choosing Belzona as an alternative to the traditional method of repair, the company was able to save over \$250,000.

### PICTURES

1. Shaft damage by electrolysis.
2. Shaft with Belzona 1111 being applied
3. Shaft with copper former while Belzona 1111 is curing. The release agent was applied on the former.
4. Former removed and the application is now completed.



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