Repairing a 400 MVA, 400/220/24 KV Shell Type transformer for Spain’s largest Transmission Utility called Red Eletrica (REE) is always a challenge, particularly when the transformer, which was originally manufactured by Westinghouse Spain in 1974, experienced windings failure in Gueñas Sub Station in the North of Spain.

In January 2009 the customer contacted ABB to remove the failed transformer from site and replace it with their available spare.

Due to the heavy transportation involved in moving the failed unit to a repair facility and lack of feasible space in the existing substation for site repair, the customer was reviewing options to scrap the failed unit.

Based on the available installed base knowledge of the customer, ABB was able to analyze and identify a location where the existing failed transformer could be repaired and put in service. ABB took the initiative to perform the engineering study in order to identify the upgrades required for the transformer. Lead time and repair costs for remanufacturing were the key to the project.

ABB engineering and sales team was able to develop a proposal for the customer including complete disassembly of the failed unit on existing site and transportation of the parts to the new site for TrafoSiteRepair. The proposal also included upgrading the transformer to 500 MVA with tap changer and COPS tank upgrades with new tap changer.

Customer need
- Repair of 400 MVA Shell Type transformer
- Short lead time
- Low maintenance and repair costs

ABB response
- Rating Up rated by 20 % from 400 MVA to 500MVA.
- Tap changer retrofit to meet new voltage regulation requirements.
- Tertiary winding Voltage changed from 24 KV to 33 KV.
- High Voltage testing.
- Roller Rail system changed from 2 rails to 3 rails.
- Old Conservator replaced with new COPS tank system and moved to new location.

Customer benefits
- Transformer was repaired and installed within 10 months of the failure.
- Reduced Transport risks and costs.
- Avoided environmental risk for scraping of transformer.
- Increased rating by 20% over existing.
- Monetary saving for the purchase of a new transformer.
- Executed with the same quality and standards as that used in an ABB factory.
For more information please contact:

www.abb.com/transformerservice

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