

SDG&E, in the USA, uses the Treotech Retrofit Program for Bushing and Temperature Monitoring Systems

Since 2003, the San Diego Gas & Electric (SDG&E) utility company, in San Diego, California, has used the Treotech BM on-line bushing monitoring system in order to increase operation safety in two 525/230kV 1120MVA banks of single-phase auto-transformers (GE e Siemens) and one bank of 525kV single-phase reactors (Siemens).



In late 2004, it was shown that the objective had been achieved when the bushing monitor issued a high capacitance alarm for one of the 525kV bushings, thus avoiding a possible failure in that equipment, which was later proven by way of off-line measurements.



In order to obtain the latest functionalities available for their bushing monitoring system, SDG&E contracted the Treotech Retrofit Program to update the existing equipment. For this purpose, Eng. Marcos Alves and engineering trainee Daniel Santos, from Treotech, visited the Miguel substation between 13 and 15/02/2007 to commission the new system and train users in its operation.

Among the different new functionalities featured by the new system is the new algorithm for detection of loss of signal from the tap of the bushing, which allows auto-transformers and reactors to be de-energized without issuance of unnecessary notices. This functionality is especially important for the bank of reactors, which is switched on and off frequently during the regular operation of the power system.

The retrofit work also included up-dating of temperature reading equipment for auto-transformers and reactors, by installing the new TM1 and TM2 temperature monitors. Because of this, the forced ventilation system previously controlled by mechanical thermometers, started to operate more accurately, ensuring lower operating temperatures for the machines, in addition to featuring more reliable overheating protection.

