



# SOLUTION NOTE

## COMBINED CYCLE THERMAL POWER PLANT SAN DIEGO DE CABRUTICA (VENEZUELA)

SN-CABRUTICA-EN-0514

### SAN DIEGO DE CABRUTICA THERMAL POWER PLANT TURBINE AUXILIARY SERVICES & GENERATOR EMERGENCY START-UP PROTECTION

With 450MW of total installed capacity, San Diego de Cabrutica Thermal Power Plant is located in the northeastern region of the country Anzoátegui. The development of the Power Plant permits to meet the needs that have led to the strong growth of the oil sector in recent years and decrease the generation gap currently present in this area.

Ormazabal has recently supplied primary distribution switchgear for two power distribution centers which are meant to energize the auxiliary services of the turbine and the protection of the emergency start-up system of the generator.



**YEAR** » 2012  
**CLIENT** » PDVSA-CORPOELEC  
**LOCATION** » San Diego de Cabrutica, Venezuela  
**SOLUTION** » Turbine & Generator Auxiliary Services  
 System Protection  
**SEGMENT** » UTI – Generation

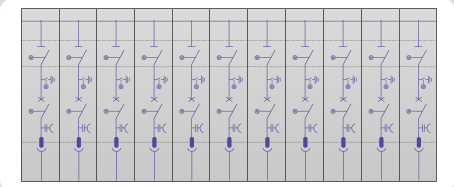


#### ORMAZABAL CPG.1: FIXED MOUNTED, SINGLE BUSBAR, GAS INSULATED SWITCHGEAR UP TO 36 KV

**Switchgear Type:**  
Circuit Breaker Panel (V)  
**Electric Data:**  
16 kV – 2000 A – 31.5 kA  
**Scope of Supply:**  
16 Cubicles

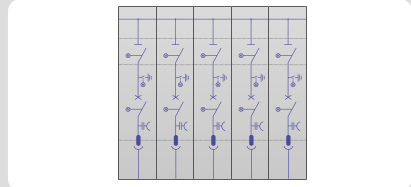
#### THERMAL PLANT TURBINE: PROTECTION AND OPERATION OF THE AUXILIARY SERVICES

**Scope of Supply:**  
11 Cubicles



#### THERMAL PLANT GENERATOR: EMERGENCY START UP PROTECTION & AUTOMATIC TRANSFER SYSTEM

**Scope of Supply:**  
5 Cubicles



#### THE CHALLENGE AND THE SOLUTION

With an installation of two units of 150 MW open-cycle turbine generators, with natural gas fuel, and the option to install a third unit of 150 MW to close the cycle advantage of the residual heat; the complexity and design of the distribution substation required a modular division to establish the best conditions of safety and energy efficiency of the facility.

Ormazabal, along with its local partner **Equiset**, took part in the module regarding the energization of the auxiliary services of the turbine as well as the making of an automatic transfer lines system to the reference generator module.

To meet our client's needs, the CPG.1 units were customized and the project was delivered under a "turn-key" concept in a surprising sort delivery time.

#### ORMAZABAL KEY BENEFITS

- Ultra safe switchgear, internal arc tested according to international standards
- Local support to end customer thanks our partners strong relationships
- Improvement of number of incomings and outgoings extensible to the future turbine generator unit