

## >> GIS Modernization



S155 circuit breaker: 25 years old.



T155 circuit breaker: latest generation adapted to existing substation.

### Customer

ENDESA, the Spanish generation utility, and REE (Red Electrical España) the transmission provider.

### Customer Situation

ENDESA was faced with the replacement of an obsolete 420 kV GIS S155 circuit breaker (25 years old) at their Teruel substation. The 420 kV Teruel GIS was manufactured by Delle Alsthom in 1979. It is composed of three circuit breaker groups owned by ENDESA and two line circuit breakers owned by Red Electrical España. Each circuit breaker pole has four chambers operated by two hydraulic rams (FB4 type).

ENDESA and REE carried out the periodic preventive maintenance as recommended by Delle Alsthom, Alstom and AREVA T&D. In 2008, after 28 years of operation, it was recommended to replace the five circuit breaker capacitors and to overhaul the hydraulic equipment...a costly and timely renovation.

### AREVA T&D Solution

As an alternative, AREVA proposed replacing the old circuit breakers by new two-chamber circuit breakers (T155) and new spring operating mechanisms, thus effectively upgrading old AREVA legacy equipment with new, state-of-the-art GIS equipment.

ENDESA decided to test the solution by replacing the first circuit breaker. The order was placed for the new equipment and a short shutdown was programmed for the work to be accomplished.

All AREVA T&D Service and manufacturing teams worked together to meet ENDESA's objectives and the program was successful. ENDESA issued a second order for two more circuit breakers to be installed in 2009.

AREVA T&D Worldwide Contact Centre:  
<http://www.aveva-td.com/contactcentre/>  
 Tel.: +44 (0) 1785 250 070

**Energy is our future, don't waste it!**