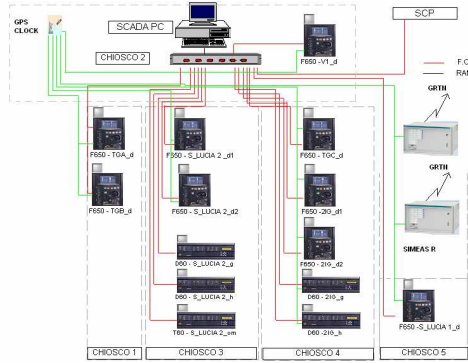


## Modernisation of 380kV Substation with Protection & Control of HV Bays annexed to Torrevaldaliga SUD Power Plant



View of Torrevaldaliga SUD Power Plant



Protection & Control system architecture



Substation detail

SAET has been awarded by ENEL the modernisation of the HV Substation annexed to the Power Plant of Torrevaldaliga Sud (Civitavecchia, region of Rome-Italy). The power plant is connected through its HV Substation to TERNA 380kV national grid, from which receives energy during start-up operations and to which delivers its own produced energy when in operation. The modernisation was targeted to the HV bays of steam sections 2 and 3 (combined cycle modules), the first one with two gas turbines (TGA and TGB) plus a steam turbine (total net 760MW) and the second one with a gas turbine (TGC) plus a steam turbine (total net 380MW). The scope of supply was including the replacement of some 380 kV equipments and Protection & Control system. SAET has taken full charge of the executing design (both elec-

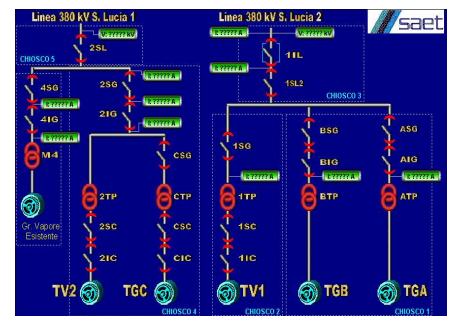


Protection panel

tric & civil, including the HV OHL Portal design), supply, erection, commissioning and start up of the installation. More in detail the supply has been including as well the Protection & Control system based on GE Digital Protections D60, T60 and F650 (SAET is VAR-Value Added Reseller of General Electric) together with a SCADA station linked to the remote protection devices through an Ethernet TCP/IP protocol. In addition, it has been supplied as well the supporting framework, a number of kiosks to house protection&control devices, linetraps, assembly of surge arresters, line disconnectors, CTs, VTs, switchgears, disassembly of the old 380kV equipment, lighting and safety systems. Every equipment supplied was complying to ENEL specifications.



View of the substation



Display of HV Bays single line diagram