



# 380 KV Power Circuit Monitoring

## Florence, Italy



*Cable Section in Trench*



*Road Crossing / Horizontal Drilling*

In 2010 a new 380KV power circuit (north / south axis) was put into operation as part of a nationwide power grid improvement. Near Florence the high voltage circuit has buried sections in close proximity to a very populated valley and a historic church. The primary route was completed in trenches filled with thermal sand. The project also included challenging road crossings that used horizontal drilling to complete the construction.

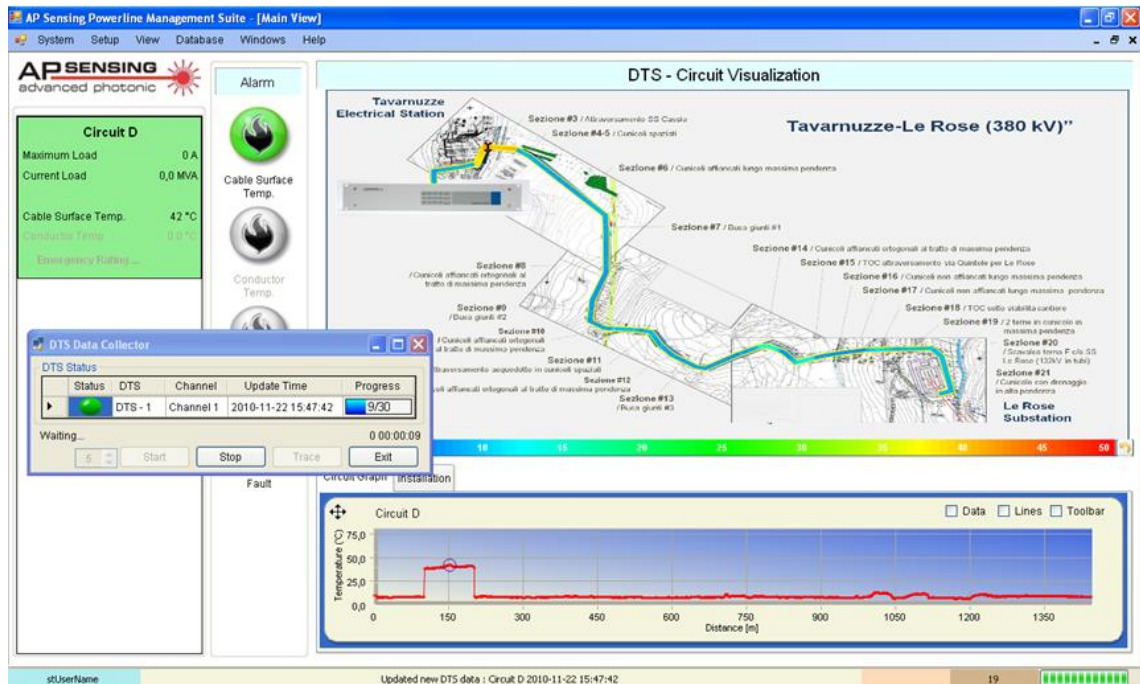
In order to maximize the utilization of the circuit and prevent catastrophic failure in emergency situations, the complete circuit's temperature profile is continuously monitored with an AP Sensing Linear Power Series DTS (Distributed Temperature Sensing) instrument.

The AP Sensing DTS unit has a very flexible alarm system with programmable zones. Each zone has multiple alarm parameters that report if temperature levels are exceeded or if there are suspicious rates of temperature change. The systems are equipped with relays to report the system status, pre-alarm, alarm and fiber break conditions directly to the substation.



2-Channel Linear Power Series Instrument  
Integrated LAN & USB Interface, SD Card Reader and 20 Relays Output

In parallel, the AP Sensing Power Management Software Suite provides an easy to see “Graphical Thermal Profile” and logs all temperature traces into an SQL database for post processing and analysis.



Power Management Suite Asset Visualization

To reduce the on-site installation and commissioning time, AP Sensing delivered the system fully integrated into a system cabinet.

The complete system included the Linear Power Series DTS, an Uninterruptable Power Supply, an industrial PC and the AP Sensing Power Management Software Suite with full Data Warehousing.

