STANDALONE PIEZOMETRIC MONITORING SYSTEM FOR MONITORING THE HYDROMETRIC AQUIFER LEVEL AND SEVERAL WATER QUALITY

ystem for 24/7 monitoring of the hydrometric aquifer level and several water quality parameters including temperature, hydrometric level and conductivity

Supply: **February 2012** | Municipalities: **Tuscany**

CHALLENGE

Execution of a stand-alone monitoring system able to monitor the hydrometric aquifer level and several water quality parameters at very great depths up to 450 metres in depth.

WHY ETG?

The wealth of experience that ETG has acquired in the weather instrumentation sector and in real-time monitoring data acquisition, archiving, processing and circulation makes it a valuable collaborator.

INTRODUCTORY SECTION

The monitoring system in question consists of **5 fixed stations** that continuously determine water quality parameters, including temperature, conductivity and hydrometric level.

The multi-parameter probes supplied by ETG are lowered inside a surge pipe, down to the desired depth. The probe and datalogger are connected using a compensating cable in PUR with which the measurement and atmospheric pressure are compensated.

The probe selected for this purpose was specifically customised for the customer with the possibility to acquire *temperature and conductivity, as well as hydrometric level* data.

ETG allows its customers to package specific probes with the acquisition of parameters that interest them up to a maximum number of 16 parameters at the same time.

THE SOLUTION

The system, comprising the elements described above, is able to monitor climate and flow rate parameters and to send them to the central acquisition system in CSV format.

A SCADA software application able to acquire the data of the stations from the monitoring control units installed and produced by ETG with the trade name iEngine was installed on a machine set up by the customer.

THE BENEFITS

The system described above was able to continuously monitor parameters of water quality at very great depths (up to 450 metres) and to transmit them automatically to a control centre.
Thanks to the technical quality of the products ETG installed, the system was able to acquire the data with a 100% Quality Level (QL) starting from the very moment the stations were installed.
This is a fundamental aspect since in view of such a great installation depth, it involves very high extraction time and resulting repositioning. With ETG, this activity was minimised, guaranteeing the presence of data without gaps due to maintenance work.

CLOSING SECTION

Every new monitoring system engineered by ETG entails peculiarities that can be solved only by those - like our company - that have been working in the sector for years.
In the case of the system executed for Enel Green Power, it led to a conflict with a problematic condition due to the installation depth of the multi-parameter probes installed.
In view of such a great installation depth (about 450 metres), it was necessary to provide a system for fastening the compensating cable in PUR able to ease its weight. In fact, considering its fragility, its own weight would have been able to create lacerations on it. These lacerations would have been even more probably if it had been necessary to remove the probe at a later time.