

Utilities gain experience with the PSM500 Power System Monitoring System

Distance to fault
= 25.3 km +/- 0.4 km



PSM workstation at NCC



PSM workstation at protection engineer's office



- ▲ Improved power network uptime through fast access to fault information
- ▲ Quicker fault finding and repair due to automatic disturbance evaluation and customized information for each user group
- ▲ Utility-wide access to information over multiple communication channels (modem, LAN, WAN, etc)

The PSM500 Power System Monitoring system ensures round the clock availability of decision support information wherever you need it. Seamless integration of IEDs to station, regional, national or enterprise levels facilitates analysis of data from system-wide sources and allows faster finding and elimination of faults and weak spots in the power system.

Situation without PSM

- ▲ The NCC engineer had very little information to aid decision-making in case of a fault
- ▲ The protection engineer had to personally visit each substation to collect the disturbance records—a very time consuming effort

Situation with PSM

- ▲ Now disturbance records from all connected stations are collected and evaluated within minutes of the fault occurrence—all automatically, thereby saving time
- ▲ Notifications and reports are automatically generated and sent to the designated user groups
- ▲ The NCC engineer can act quickly to restore the network and give precise directions to the repair team
- ▲ The protection engineer has access to all disturbance records, events and settings from the RE_316*4 devices in order to conduct a more detailed analysis of the occurrence, if required

Additional advantages of PSM

- ▲ Centralized, structured archiving of disturbance record files simplifies efficient analysis and increases the utility's ability to improve power supply quality. With easy access to all past occurrences, the weak spots in their power system can be localized and eliminated.
- ▲ The scalability of PSM affords customers the choice to **start with the implementation for one substation and add further substations as needed.**
- ▲ Similarly, additional functionality can be implemented, e.g. the geographical information system, web interface, data exchange to customer's IT applications.
- ▲ The usage of multi-communication channels simplifies implementation: e.g. telephone modem connections or the fast LAN / WAN Ethernet can be used.

The Swiss utilities Elektra Baselland Liestal (EBL) and Industrielle Werke Basel (IWB) utilize Power System Monitoring systems since 1999. Both decided to install PSM in order to increase the availability of their respective networks and reduce outage times. Did they achieve their goals?

Case study: Storm "Lothar" over Switzerland

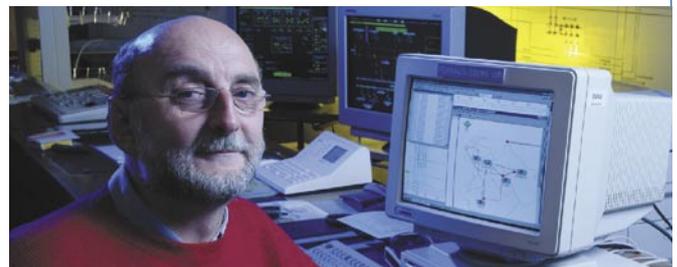
Storm "Lothar" caused a flood of disturbances in the power network of EBL. The benefits of the installed PSM, with its automated disturbance record evaluation, impressed the client enormously. EBL received around 60 disturbance records within 3 hours. In that time, up to 5 trips occurred at each of approximately 20 locations. Such a situation posed a huge challenge for the engineers and operators, which PSM helped them to tackle efficiently.

Disturbance records were automatically evaluated and transmitted to their offices, where automatic printouts with user specific information were available within minutes of the fault occurrence. These fault reports were key factors in decision-making for EBL's operators and protection engineers and resulted in a faster network restoration.

This experience in December 1999 was a driving force at EBL to further expand their PSM system with a stepwise addition of functionality and extension to other substations.

Conclusion

The PSM system creates tremendous value for various user groups in a utility organization. It is a tool to aid both management and engineers in decision making and helps them to considerably reduce the outage times of their power system.



Mr. Sandor Csontos, EBL, confirms: "This is a great system. It contributes to the high availability of our network. Based on our good experiences with the system so far we would like to implement further applications."

For more information please refer to the responsible ABB sales engineer for your country or to the address mentioned below



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