Utility communications
In-plant communication solutions
A complete suite of communication solutions for power plants and substations

Electric utilities need to operate and manage their networks with increasing efficiency. Security aspects have become more relevant, and integration into third party grids and other players is unavoidable. The telecommunication infrastructure not only allows operation and coordination within the electrical system, but also the implementation of applications for the secure management of the assets.

‘In-plant communication’ refers to the different applications and technologies that are used internally in a substation or a power plant. The final solution should not only consider the compatibility of the applications, but also secure the integration into the overall communication infrastructure.

Operation is critical
Operation of the electrical grid is critical not only for the utility but also for the authorities. The high level of availability requires products with high performance as well as the use of all available applications and technologies. Security is an increasingly important issue for electrical utilities. It is a national issue, with many authorities developing new security requirements for the electrical infrastructure.

Recovery is crucial
The communication facilities are also extremely important during the recovery phase. After a black out or a disconnection, the operators in control centers, substations and power plants require the full availability of the telecommunications to re-establish the power network.

Telephony
Telephone systems offer access to the public network and the internal platform existing in the power grid. They support voice communication between operators and maintenance crews, as well as within the company. Voice communication is also crucial for all aspects related to the physical security of staff and plant.

Local Radio DECT
Private local radio facilities are extremely important during maintenance activities, and during the recovery process. The cost of radio licenses, and the need for integration into the voice infrastructure, has made the use of local radio DECT the preferred solution.
Public Address Systems
A proper public address system covering the different areas of the power plant and substations is required not only for maintenance activities but also for the security of the installations. This system is critical in case of emergency situations where staff should be informed and/or accessed very quickly.

Closed Circuit Television
Closed-circuit television is widely used for surveillance and security. Video surveillance is one of the applications used to control access of people to premises. It is also used in some special process applications, such as the visual monitoring of water levels, animal intrusion, etc. The security applications support the automatic monitoring of defined areas or access, as well as the recording of scenes for future analysis.

Access Control - Intruder Detection
Only authorized staff should have access to the installations. Unauthorized access should be prevented, but also access attempts should be recorded. Inter-operation with alarm and other systems should be provided.
Normal operation and security level | Premises under degradation of security level | During recovery of security level | Grid performance during electrical disturbance or misoperation | During recovery from misoperation
---|---|---|---|---

Voice

Local Wireless DECT

Public Address

Video Surveillance

Access Control - Intruders Detection

Fire Detection

Hot Voice

Data

Teleprotection

**Applications and their use during different conditions**

<table>
<thead>
<tr>
<th>Intensive</th>
<th>Less intensive</th>
</tr>
</thead>
</table>

**ABB - the full scope supplier**

ABB is a global supplier with over 60 years experience in providing communication systems for electric utilities. ABB fully understands customer needs and offer integrated and customized systems.

In-plant communication often requires the integration of different technologies combined with out-plant communication, for example, fiber-optic or power line. ABB offers the full range of solutions with the additional services required. With its extensive know-how ABB is the right partner to develop your complete communications network.

**Complete communication networks for utilities**

ABB has the know-how and product portfolio covering various communication technologies. ABB designs networks that embrace the best technology and media relative to your present and future requirements, power system topology and existing communication equipment.

For more information please contact:

**ABB Switzerland Ltd**

**Power Systems**

Brown Boveri Strasse 6
5400 Baden, Switzerland

Phone: +41 58 589 37 35

or +41 544 845 845 (Call Center)

Fax: +41 58 585 16 82

E-Mail: utility.communication@ch.abb.com

www.abb.com/utilitycommunications