Changsha Distribution Automation Project

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High lights

- Overview
- Finished Works
- Next Plan
- Benefits
Finished Works

- CSGC-3000/DMS/PIB/iOMS
- CSC-270 distribution slave substations
- CSC-271 distribution terminal units
HMI of the Master Station

EPON (Ethernet Passive Optical Network)
Changsha City has more than 200 substations and 850 feeders. Now, the single line diagram of all the substations and feeders have been put into use. About 100 feeders have been configured with FTUs or DTUs. About 100,000 AI/DI points from EMS, FTUs and DTUs.
HMI of the Master Station

Fault location information

Fault isolation schema

Restoration operation steps
Information Exchanges

DMS: Distribution Management System
EMS: Energy Management System
GIS: Geographic Information System
CIS: Customer Information System
PMS: power Production Management System
Information Exchanges

CSGC-3000/PIB

EMS

GIS

DMS

PMS

CIS
HMI of PIB

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<tr>
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<th>URL</th>
<th>Module</th>
<th>Zone</th>
<th>Action</th>
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iOMS

CSGC-3000/iOMS supply information and support for Scheduled Outage Management
iOMS

CSGC-3000/iOMS supply decision support and interactive management for fault handling

Fault location and isolation
Service restore
Outage Plan

Dispatcher
Fault Equipment
Overhaul Command

DMS
FLISR
Outage notice

WMS
CIS
95598

Trouble Call Management
outage notice
**Next Plans**

**Distribution fault treatment standardization**
- Fault location push-out
- Fault assist identify
- Affect users analysis

**Repaired resources management**

**Tasks assign management**

**Working monitoring**
Outage events are recorded centralized, and be statistics automatically.
Next Plans

Line losses statistics in district and voltage level can be simple and accuracy.

Distribution transformer supervisory

Distribution transformer data

Whole network model

Loads in different voltage levels

User data

Big user load

Feeder models

Statistician

Main network model and data acquisition

DMS

Distribution network model and data acquisition
Benefits

- Terminal monthly on-line rate increases from 0% to 97.15%
- Tele control success rate increases from 0% to 96.43%
- Average operation time reduces from 12 minutes to 2 minutes
- Non-fault area power restore time cuts down from 60 minutes to 30 minutes.
Any Questions?

Thank you for your attentions