Outliers Discovery from Smart Meters Data Using a Statistical Based Data Mining Approach

ABSTRACT

- Statistical approach used for detection of outliers from load curves recorded on the electric substation of distribution networks
- The load curves provided by smart meters were processed and their main indicators were calculated
- By outliers elimination, the remaining data have led to the discovery of accurate patterns that characterized very well the load curves characteristics through indicators
- The proposed approach was tested using a real database with 60 substations from a rural area. With the help of these patterns, the operation and planning of electric distribution systems

EXISTING SYSTEM

- technological developments in the electricity domain can provide the company unprecedented capabilities for shaping customer usage patterns, preventing outages, optimal unit commitment etc.
- Electricity companies must be able to manage and use a lot of data and perform advanced analysis necessary to make the best decisions

DISADVANTAGES

- Unfortunately, due to various random factors, the load curves always contain
- abnormal, deviation, unrepresentative, noisy, strange,
- anomalous and missing data

PROPOSED SYSTEM

- comprehensive method that use a statistical based data mining for load curves characterization by detection of outliers using information provided by Smart Meters in real distribution networks
- Proposed approach to be efficiently used by distribution operators in accurate patterns discovery of the load curves characteristics with the help of which the operation and planning of power systems

ADVANTAGES

- efficiently used by distribution operators in accurate patterns discovery of the load curves characteristics
- with the help of which the operation and planning of power systems, could be made

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