Substation Inspection & Maintenance

Web Software

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Utilities face major challenges to achieve optimized availability of resources, enhance customer service and reduce overall operating costs. From preventive maintenance scheduling to automated equipment testing, substations nowadays require structured management and control techniques.

Substations' equipments need to be catalogued in a database with all parameters, item histories and test results. Such database should be adaptable to the needs of operators with the ability to perform statistical and graphical analysis on the facility's tested equipment.

Automation Systems and Diagnostics, Inc offers you a complete substation solution that covers all the aforementioned requirements. ASD has a wide experience in automated test, control and measurement systems for power industry as well as providing services to the field.

SIM serves as substation preventive maintenance software and audit software which helps early detection of substations' equipment degradation and other defects which will adversely affect reliability. SIM is web based software equipped with consistent database that provides entry, analysis, reporting and storage for substations' equipment and equipment test data as well.

Overview

SIM can be operated from any internet accessed device. The software interacts with database covering all parts and equipment in various substations. It is capable of various functions serving one purpose, inspection and maintenance. Along with technological leap, ASD upgraded SIM to be applicable on smart devices.

SIM Software

The software permits various functions and features:
Data Entry, Generate Inspection Forms, Inspection, Maintenance, Fluid/ Gas Analysis, Single Line Diagram, Line Equipment, Protection Relays, Transformer Tests, Settings and Report Generation.

Data Entry

- Generate own data entry forms for substations and substations' equipment, or simply download template forms. Equipment include
- Add/ Edit/ Delete data to/from database for substations, substations' equipment and inspectors.
- Add equipment pictures and move equipment between substations.
- Fetch and list equipment in system or in stock.

Generate Inspection Forms

- Generate up to three inspection forms of substations' equipment.
- Define field name, type, condition, description, priority, category, and multiplier.
- Add/ Edit/ Delete fields of generated inspection forms.

Inspection

- Add / Edit inspections for any of the generated inspection forms of any equipment.
- Define failure codes for abnormal results.
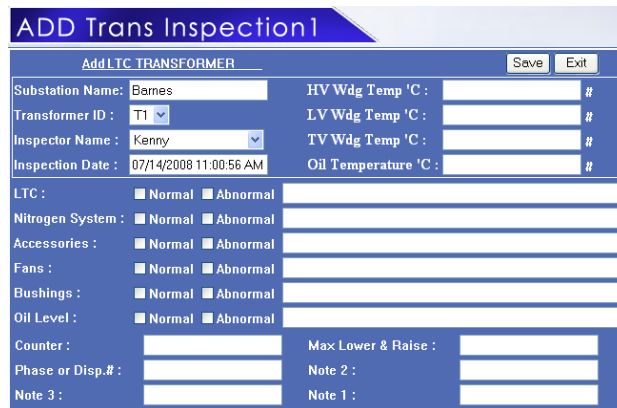
Maintenance

- Check work orders for abnormal and false regular inspection results.
- Generate preventive maintenance work orders.

- Create / Edit schedule for regular and preventive work orders to be accomplished defining the maintenance date.
- Track regular and preventive work orders for equipment & sub equipment.
- Filter and sort work orders due to several criteria
- Check Gas Analysis Output.

Fluid and Gas Analysis

- Check for disturbances in the levels of fluids and gazes for transformers, regulators….
- Add/ Edit/ Delete to fluid and gas analysis forms.
- This analysis shall form the trend analysis of gazes and fluids.

Single Line Diagram

- Draw / View the single line diagram of a selected substation utilizing the substation's equipment defined in database.

Line Equipment

- Add/ Edit / Delete data for Reclosers
- Place reclosers in system, stock or retired
- Search reports for reclosers
- These functions can be added for oil switches, vacuum switches and regulators.

Protection Relays

- Define data, primary / secondary ratings and its trip settings for: Voltage, Current and Grounding Protection Relays.
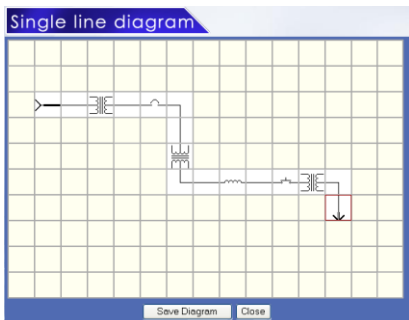
Transformer Tests

- Add result outputs of a selected transformer for: Resistance Test, Ratio Test and Power Factor Test.

Protection Relay Tests

- Add / Edit test results for: Voltage, Current and Grounding Protection Relays.

Reports

- Generate data entry reports for substations, substations' equipment.
- Generate a total summary inspection report for a substation in a selected month.
- Generate three inspection and historic inspection reports for each equipment.
- Generate counter reading report
- Generate maintenance reports (Work orders, Schedules & Work order History).
- Generate fluid & gas analysis reports.
- Generate a Failure Code report
- Generate Test Data report for: Resistance, Ratio, PF tests and Voltage, current, grounding protection relays tests
- View / Print all generated reports in PDF and excel format.
- View / Print trend analysis of transformers' gas and fluid analysis.
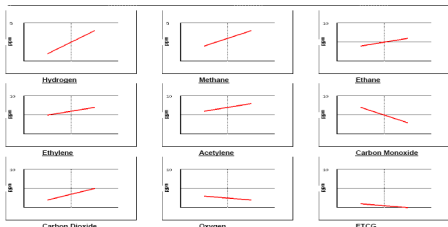
Settings

- Set the Company Information and Logo which forms the header of all reports.
- Select the fields to appear in the data entry report of each equipment.
- Select the fields, for each of the generated inspection forms of equipments that should appear in inspection and historic inspection reports.
- Define Dissolved Gas Analysis Limits.
- Define Email addresses for responsible people of regular and preventive maintenance.
- Define Holidays so that to skip while creating work order schedules.

Work Order Reminder

- Sent a reminder email about due regular and preventive work orders to the responsible person

On-Site Management Device

For convenience on the field and keeping up with new technologies of smart devices and continuous internet accessibility, ASD upgraded SIM to be compatible with such devices and be used online onsite without any limitation.