LOAD FLOW STUDIES

Why Load Flow Studies?

Load flow studies are one of the most important aspects of power system planning and operation. The load flow gives us the sinusoidal steady state of the entire system - voltages, real and reactive power generated and absorbed and line losses.

Advantages

- Optimize component or circuit loading
- Develop practical bus voltage profiles
- Identify real and reactive power flow
- Minimize kW and kvar losses
- Develop equipment specification guidelines
- Identify proper transformer tap settings

Evaluating Load Flow

The most important information obtained from the load flow analysis is the voltage profile of the system.

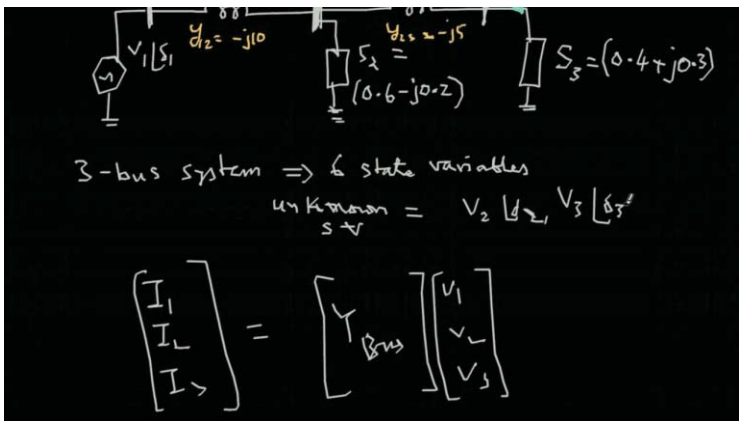
If voltage varies greatly over the system, large reactive flows will result. This, in turn, will lead to increased real power losses and, in extreme cases, an increased likelihood of voltage collapse. When a particular bus has an unacceptably low voltage, the usual practice is to install capacitor banks in order to provide reactive compensation to the load. Load flow studies are used to determine how much reactive compensation should be applied at a bus, to bring its voltage up to an appropriate level. If new lines (or additional transformers) are to be installed, to reinforce the system, a power flow study will show how it will relieve overloads on adjacent lines. An inefficient or unbalanced load can also cause unpredictable behaviour in your localized power grid, increasing the risk of equipment damage and unplanned outages.

Our Load Flow Analysis Includes

- Data collection and monitoring
- Evaluating the calculated and current load demands in the system
- Data analysis
- Comprehensive report

Data Collection

In order to determine the load flow, our technical staff will review an up-to-date single-line diagram of the electrical distribution system. Ideally, the single-line will provide equipment ratings, connected load, types of loads, etc. If a current single-line diagram and relevant data is not available, then the engineer will need to collect this data to perform the study.



Our Engineers shall collect exhaustive information on the connected load and the current demand. The peak demands are been noted by having a detailed information with the client, and also by reviewing the recording instruments installed in the system.

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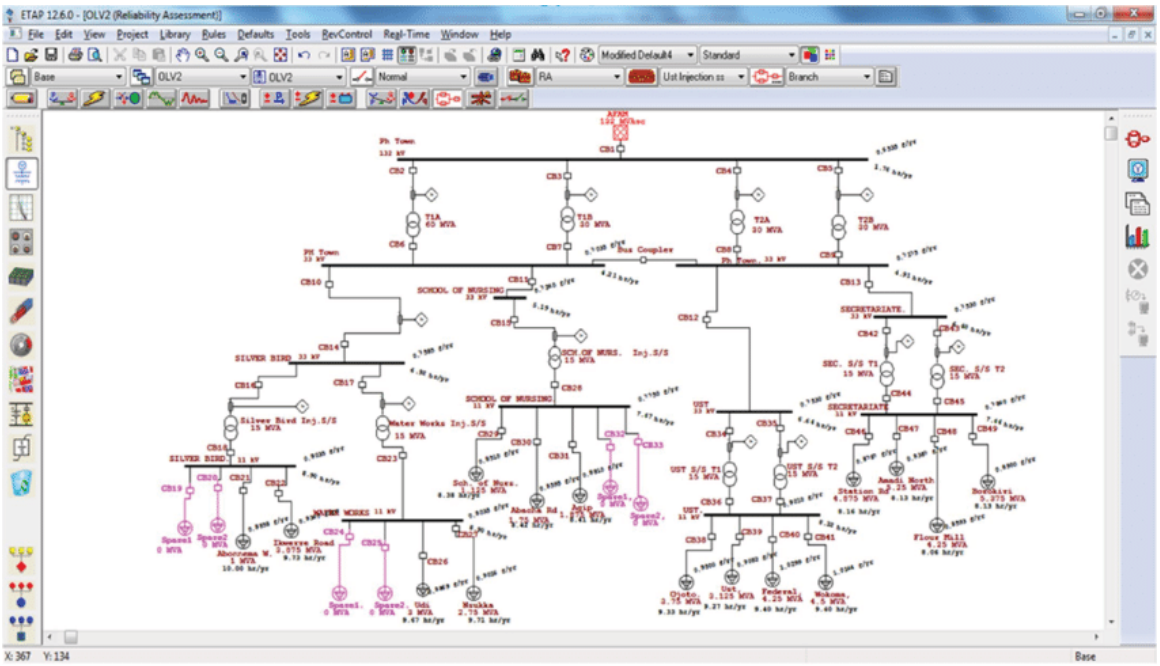
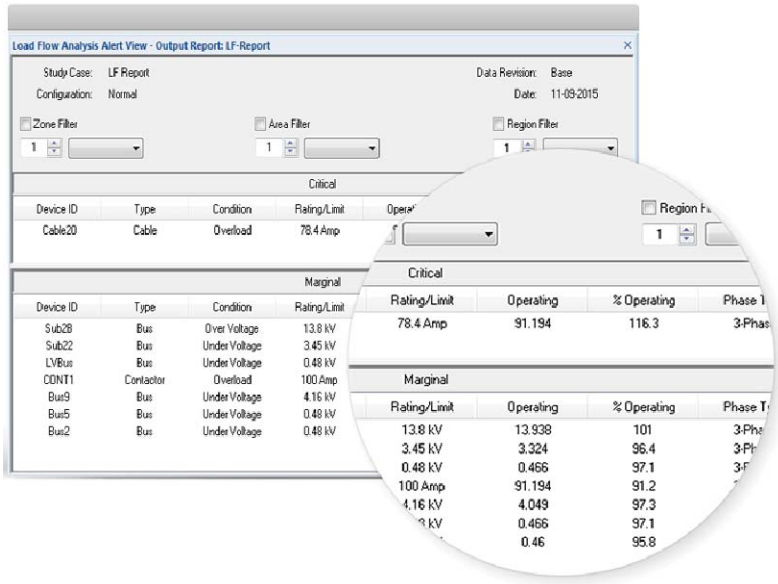
Data Analysis

Once data is collected on the electrical distribution system, Srujan engineers then utilizes specialized computer hardware and software to assist with the analysis of power system problems. The computer model helps out engineers determine optimum transformer taps and the capacitor sizing to ensuring proper load flow.



Comprehensive Report

Following analysis, you will receive a comprehensive, full-featured summary that identifies critical monitoring points. It includes detailed data records and analysis of results. Our report also includes recommendations for isolating and mitigating power problems such as using special transformers and power conditioning equipment



Summary

Through comprehensive Load Flow studies, Srujan Engineers can identify the root cause of power quality problems that disturbs optimum power flow. We evaluate voltage, current, and power factor characteristics, comparing actual values to ideal values.

Following analysis, you come away with a plan for achieving optimum power flow for your critical infrastructure demands.