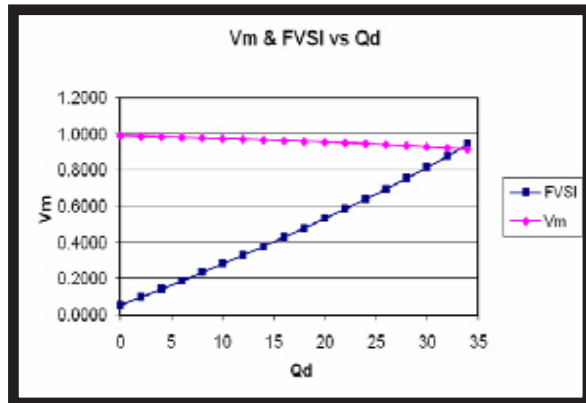
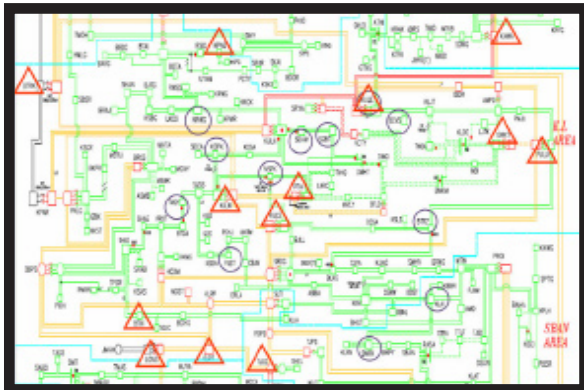


Seeding Fund Project

Study on Undervoltage Load Shedding (UVLS) Schemes using Machine Intelligence Based Method



FVSI and Voltage vs. Reactive Power Demands



Proposed Under Voltage Relay Locations

Project Overview

Our power system is always exposed to possible risk of instability including Voltage Instability. Voltage instability can be mitigated by various means e.g. switching in of reactive power support, tap changing transformers and also increase of generator excitation. However, these mitigating actions could also lead to a more detrimental voltage instability scenario. Hence the last possible mitigating action in this case would be by using Under Voltage Load Shedding (UVLS) schemes. These UVLS schemes would relate to the load shedding of several load entries in the event of possible voltage instability. This project proposed to utilize an established index called FVSI (Fast Voltage Stability Index) to act as a tool to identify the possible UVLS locations in TNB power system.

Deliverables

- A comprehensive review on UVLS schemes.
- A new tool to examine UVLS schemes
- A set of steps or methodologies to assess UVLS and voltage stability in a power system

Benefits

- Use of FVSI index in analysing system voltage stability is faster and easier compare to the current practice (PV & QV analysis)
- Simplify the process in determining new UVLS relay locations within TNB network.