

Thesis Schedule:

1. Draft thesis to Donnelly and Southergill
Week of **Feb 10**.
2. Revised thesis to Committee week of
Mar 9 (pre-spring break).
3. Thesis Defense week of **April 13**.
4. Final thesis and docs to Southergill week
of **April 20**.
5. Other tasks:

Register for graduation

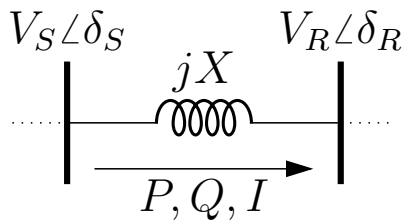
Complete other graduation forms

Book room for defense

Get EIT references

Recent Progress:

1. Branch Power Flow calculations added.



$$P = \frac{V_R V_S}{X} \sin(\delta_S - \delta_R) \quad (1)$$

$$Q = \frac{V_R}{X} (V_S \cos(\delta_S - \delta_R) - V_R) \quad (2)$$

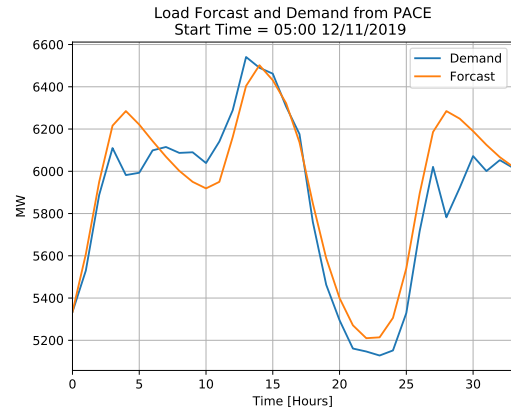
$$I = \frac{|P + jQ|}{V_R \sqrt{3}} \quad (3)$$

(Plots on reverse)

2. Generic Machine and Governors added and tested.
3. WECC simulation works - takes 6 minutes for 30 second sim time. Generic governors used, islanded objects ignored, tap changers, SVD, and phase shifters enabled, PSLF exponential load changes handled. (validation pending)
4. Differentiated between reporting ACE and distributed ACE
5. Created NERC requirement plot checks
6. PSLTDSim uploaded to PyPI
7. GitHub updated:
<https://github.com/thadhaines/>

Current Tasks:

1. Create daily load cycle agent to read EIA data (hourly forecast and demand values)



2. Solidify test cases for engineering problem
3. Update Code flowchart and finalize code
4. Thesis work

Proposed MiniWECC test cases:

duration: 4-6 hours

- system noise
- wind generation ramps
- daily load cycle (during peak/valley transition)

Control variations:

Normal gov deadband and large gov deadband
Fast (seconds) and slow (minutes) AGC

Three cases:

- normal gov, Slow AGC
- normal gov, Fast AGC
- large gov, Fast AGC

Experimental Measures:

- Valve movement
- NERC mandate adherence

Current Questions:

1. Progress on case data?
2. VAR calculation - Real power and AMPS match, Reactive power off (see reverse)

