

Meet the Team



Sarah Ortiz, Anna Collingwood, Nick Merritt, Musa Khalaf (PM)

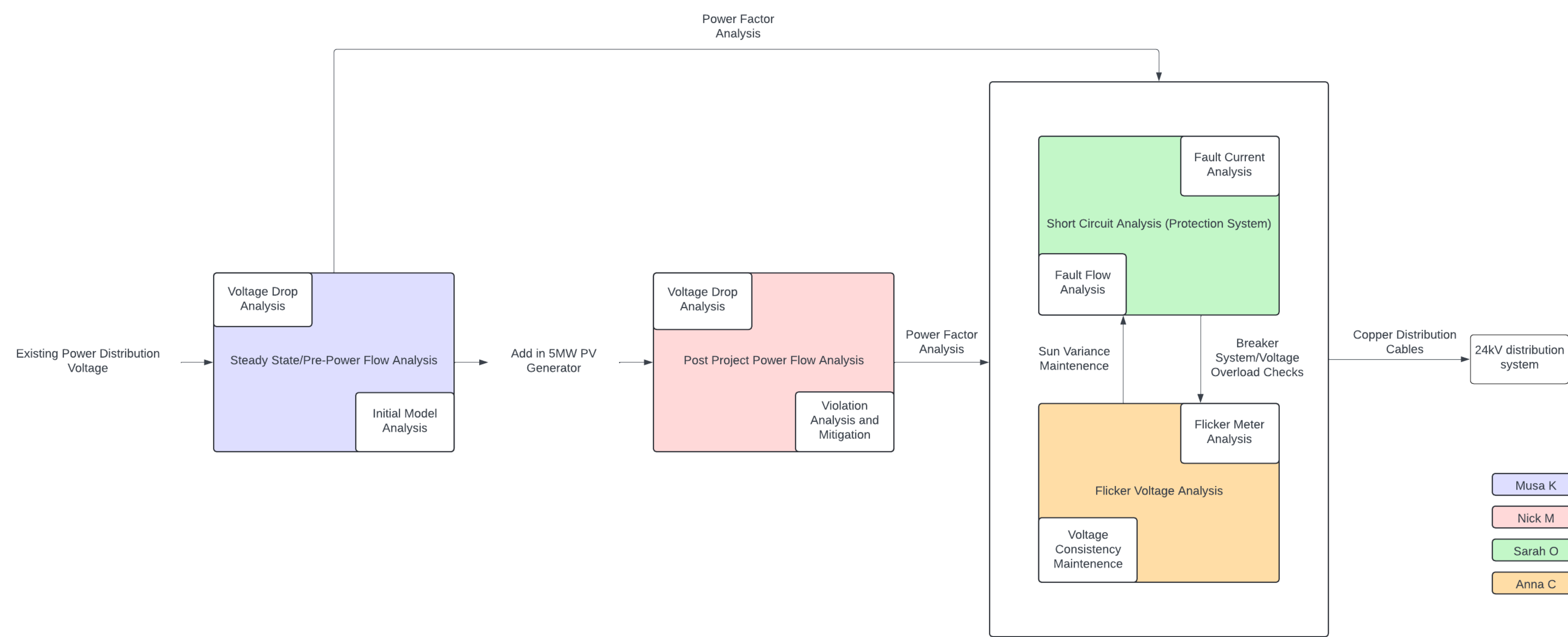
Project Background

- TRC and the Ingram School of Engineering have collaborated to conduct a system impact study that analyzes how a 5MW solar farm effects an existing 24kV power distribution system.
- The implementation of solar generation within a distribution system reduces carbon emissions and creates a cleaner way for power distribution.

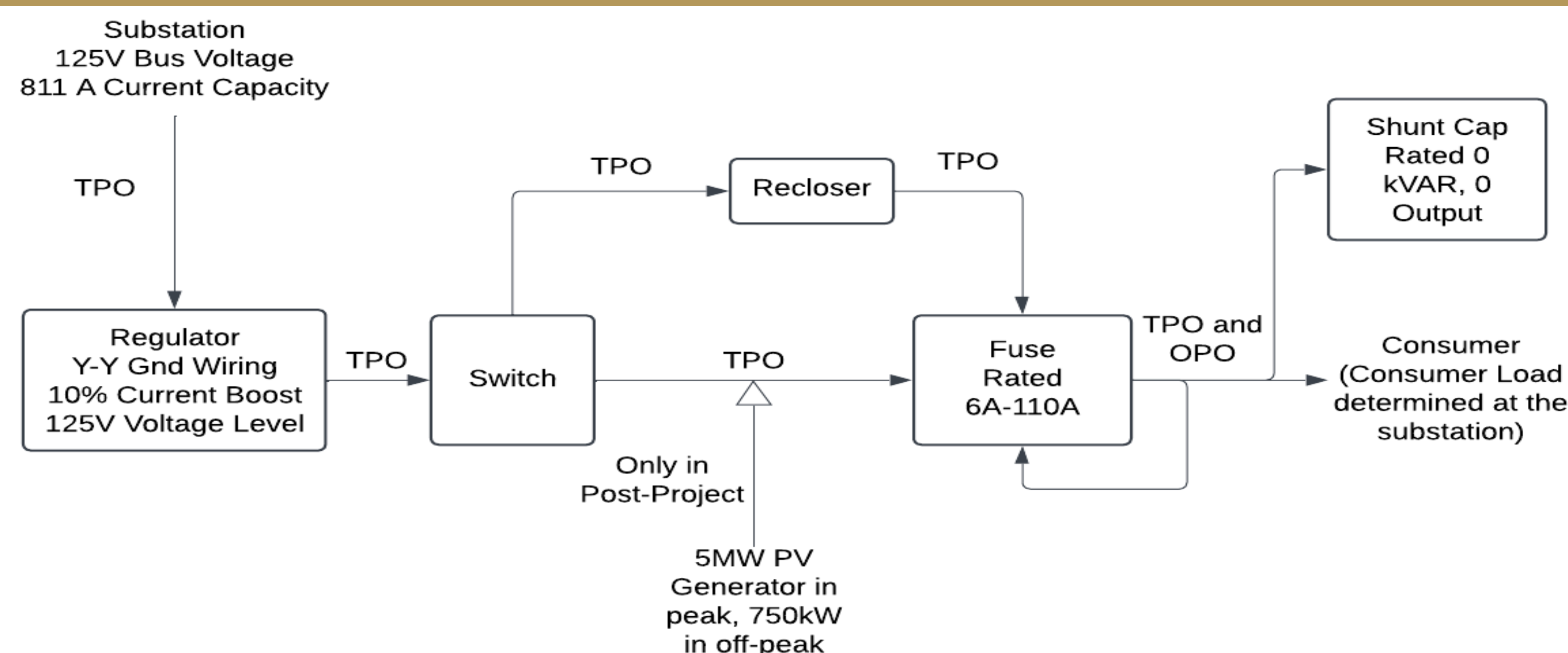
Subsystems Overview

- Pre-Power Flow Analysis**
Analyze system before PV generator
- Post-Power Flow Analysis**
Creation and addition of solar PV generator at connectivity points
- Short Circuit Analysis**
Collect pre and post short circuit data at point of interconnection
- Flicker Voltage Analysis**
Collect pre and post voltage flow data at point of interconnection

Subsystem Analysis Block Diagram



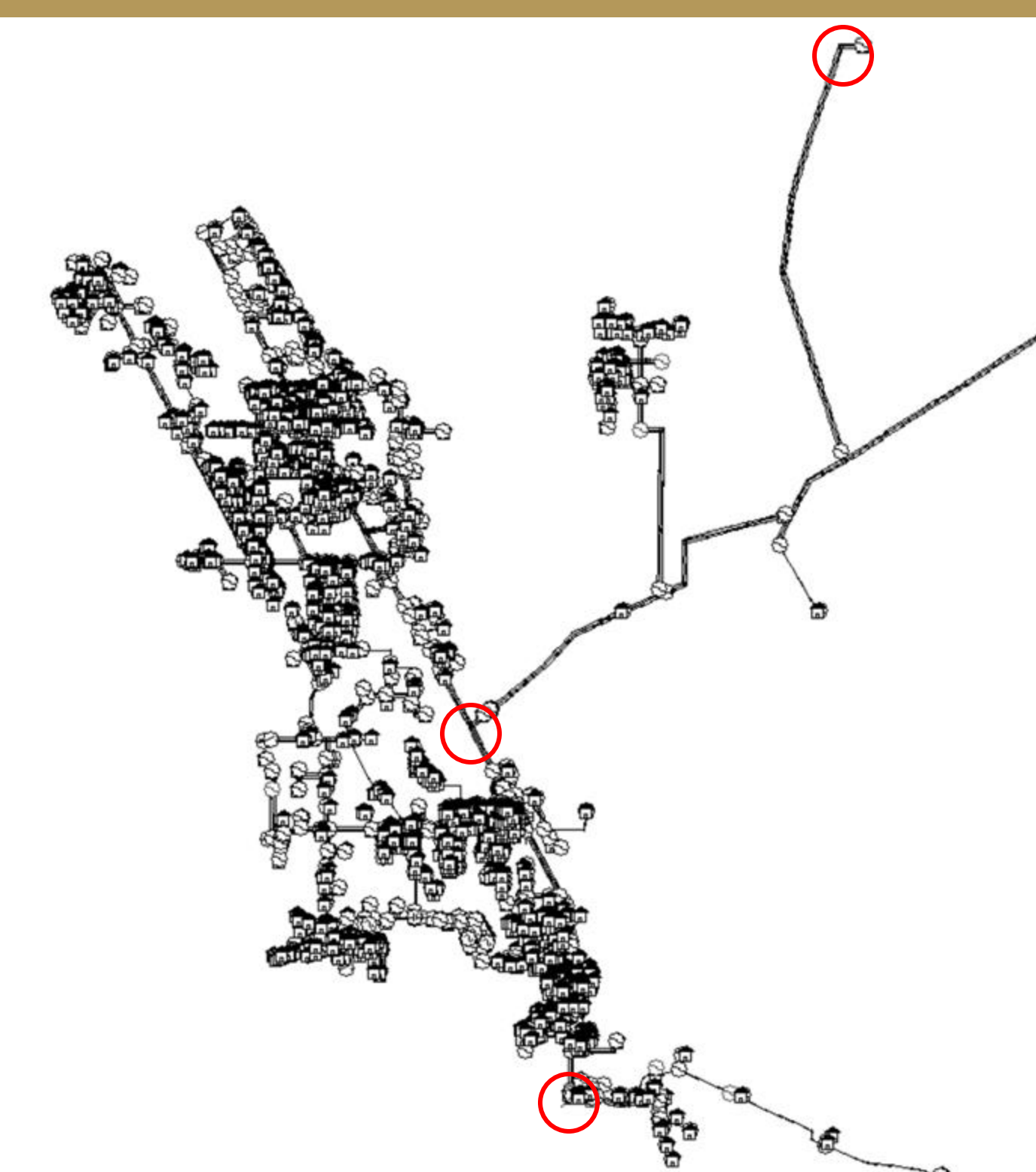
Power Distribution System Block Diagram



Individual Subsystems

Pre-Power Flow (Musa Khalaf)	Post-Power Flow (Nick Merritt)	Short Circuit (Sarah Ortiz)	Flicker Voltage (Anna Collingwood)
<ul style="list-style-type: none"> Use a provided base case model Analyze base model and identify any violations within the given model Analyze system at off-peak and peak loads 	<ul style="list-style-type: none"> Creation of solar PV generator Implement solar PV in 3 different locations on distribution system 	<ul style="list-style-type: none"> Compile fault data Check fault duty values for protection device Suggest network upgrades 	<ul style="list-style-type: none"> Review voltage fluctuation throughout system and interconnection using different time measurements Measure efficiency at interconnection

Base Model



Accomplishments

- Pre-Power analysis of violations
- Creation of solar PV generator and layout
- Implementation of 3 locations for PV generator
- Analysis of peak and off-peak load flow

Plans for Design 2

- Complete short circuit and flicker analysis techniques on interconnection points
- Analysis for mitigation
- Create full report on violations and mitigation

Acknowledgements

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