

EE/ CprE/ SE/ CybE 492 -sdmay23-02

Simulating Cyberattacks on a Power Grid to Determine Potential Impacts

Week 4 Report

3/25/23 - 4/7/23

Advisor: Benjamin Blakely

Team Members:

- Jake Stanerson – Developer lead
- Noah Peake – Developer lead
- Hrijul Balayar – Tester/ Developer Support
- Michael Gierrek – Developer Support
- Conner Spainhower – Developer Support
- Cole Medgaarden – Tester/Documentor

Accomplished Tasks:

- Uploaded more sections of the grid to Github – Cole
 - Added in transformers where power changes occur, also added in more substations.
- Finished one of the attacks for our attack taxonomy, getting it verified and will merge with main once it's insured that it is functioning properly - Jake
- Working on converting monthly and daily values to weekly, yearly, and possibly more. - Michael
- Helped complete the first attack for our attack taxonomy. Started logic for the second attack. Continued updating documentation for attacks as they are completed. - Noah
- Added some more commands to the shell and made some quality of life improvements. - Conner
- Started working on a FDIA design document for description of what our simulation will look like. - Hrijul Balayar

Pending Issues:

- Targeting specific substations as part of attack simulation

Team Member	Contribution	Weekly Hours	Total Hours
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Jake Stanerson	Finishing up False Data Injection attack script, will commit later this week to main	5	10
Noah Peake	Helped with False Data Injection Attack script, started logic for the IoT attack, updated documentation for False Data Injection Attack.	5	10
Conner Spainhower	Grid Creation Shell	3	6
Cole Medgaarden	Documented meetings, added in more sections to the grid and uploaded to github	5	10
Michael Gierek	Spreadsheet is nearly done for time series use	1	11
Hrijul Balayar	Time series and Attack planning along with finding out the proper way to output data.	3	6

Upcoming Tasks:

- Continuation of enhancements for user grid shell environment
- Converge shim files together for main grid
- Grid completion- continuing to add in more sections
- Completing attack simulation