Duke Energy Substation-Based ESS Smoothing

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Background:

Duke has installed a 402 kW/282 kWh, NaNiCl ESS (FIAMM) as a centralized substation-based distribution ckt asset
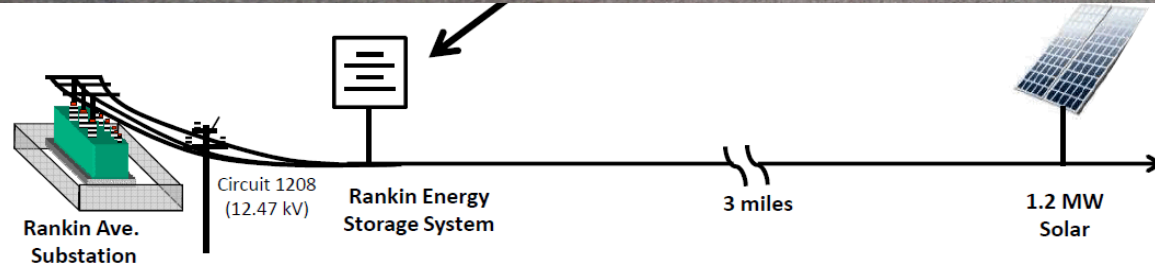
Goals:

Using centralized ESS, Duke and Sandia will design and test algorithms to:

- Mitigate PV-induced power swings on the distribution circuit
- Protect substation assets from PV-induced power swing impacts

Next Steps:

- Design ESS control algorithm to react to voltage changes on the circuit
- Implement active VAR/power factor management using the ESS

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Rankin Ave. Substation — Circuit 1208 (12.47 kV) — Rankin Energy Storage System — 3 miles — 1.2 MW Solar

U.S. DEPARTMENT OF ENERGY

NNSA National Nuclear Security Administration