

SRRTEP Committee: Mid-Atlantic PSE&G Supplemental Projects Hackensack Substation s1752 Update

March 20, 2020

Supplemental Project Number: s 1752

Need Presented: 9/21/18

Solution Presented: 10/29/2018

Local Plan Integration: 12/14/18

Supplemental Project Driver:

- Equipment Material Condition, Performance and Risk still exists
- In 2020, thermal and voltage violations also identified

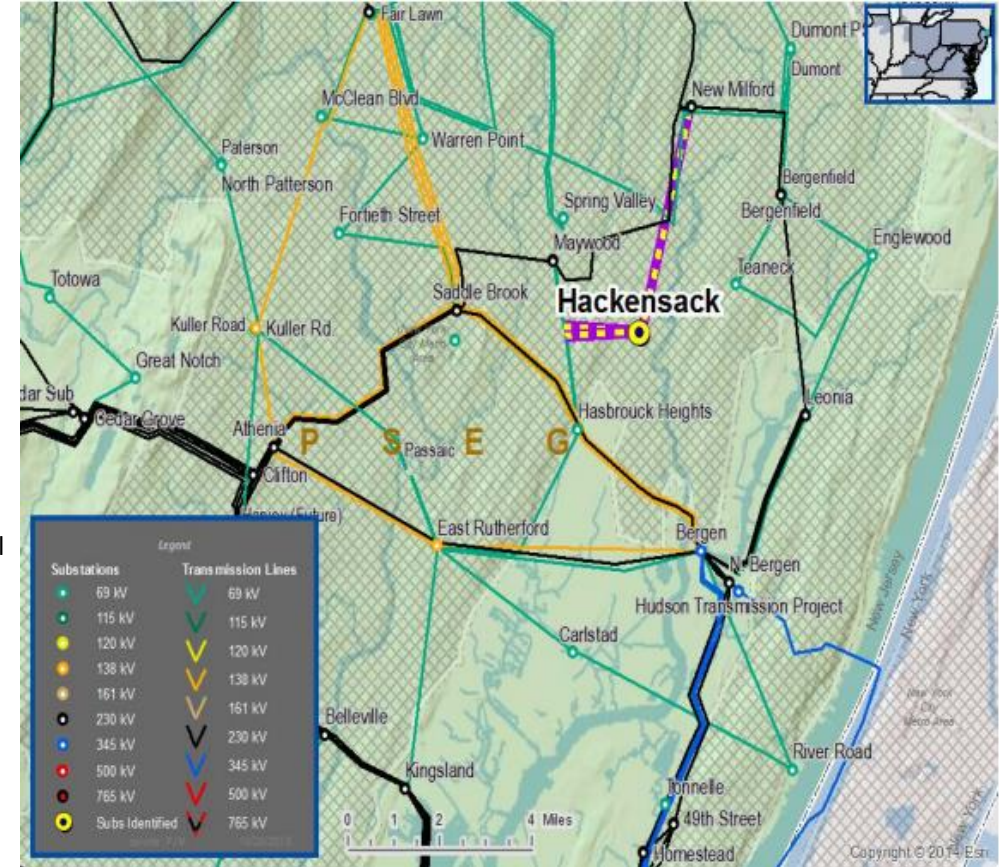
Specific Assumption Reference:

- [PSE&G 2018 and 2019 Annual Assumptions](#)
- [August 2017 26kV to 69kV PSE&G Presentation](#)

Problem Statement:

- Hackensack is supplied by three 26kV circuits with performance problems.
 - Over the past decade, the 26kV supply circuits have seen significant momentary and extended outages, with total duration of hundreds of hours.
- Station equipment at Hackensack has been in service since 1960. 26kV breakers and related relay equipment have been replaced. However, disconnect switches, three transformers and bus structure and equipment are the original 1960 vintage and need to be addressed.
- Hackensack serves roughly 5000 customers and 34MVA (2019 actual) load.
- Based on the 2019 RTEP base cases, analysis of the system showed thermal and voltage violations
 - Loss of Line from Bergen Switch to Local Sewage Authority will cause a thermal overload on the line from Bergen Switch to Hackensack because it is older construction with limited capacity. At the same time, our results show a greater than 5% voltage drop at two customer locations, one having a 8.8% voltage drop and the other having a 7.2% voltage drop.

Model: 2019 Series 2024 Summer RTEP 50/50; 2018 Series 2023 Summer RTEP 50/50





PSEG Transmission Zone M-3 Process Hackensack Substation Update

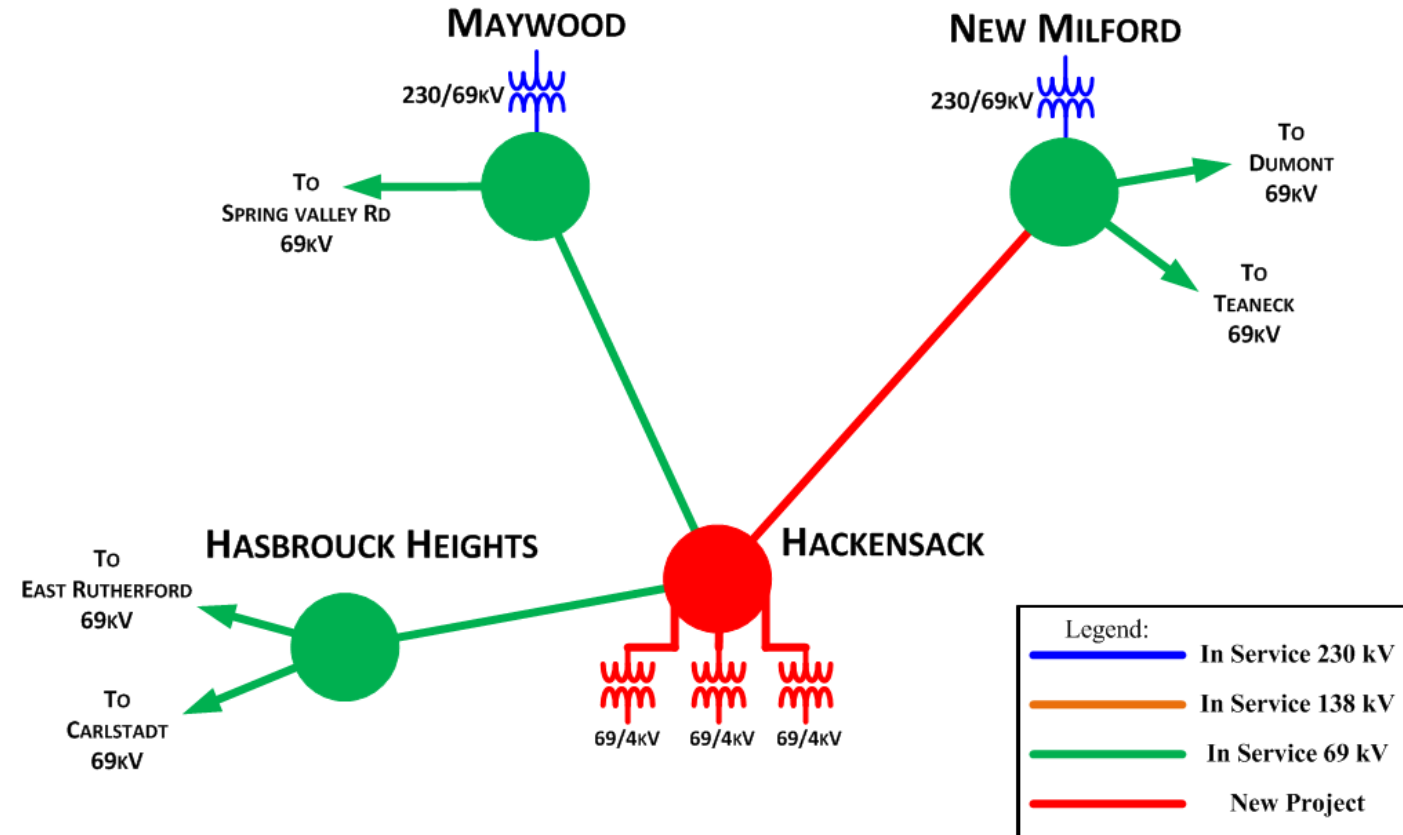
Need Number: PSEG-2018-001

Proposed Solution:

- Hackensack Station Upgrade
 - Install a 69kV ring bus with three (3) 69/4kV transformers.
 - Construct a 69kV network between Hackensack, Hasbrouck Heights, Maywood, and New Milford.
 - This solution provides for future station capacity expansion.
 - **Estimated Cost:** \$76M (refined estimate from 2018 est of \$83M)
 - **Projected In-Service Date:** 05/2023 (no Change)

TO Alternatives Considered:

- Alternative 1
 - Construct a 230/69kV station at Hackensack.
 - Install a 230kV ring bus with one (1) 230/69kV transformer.
 - Cut and loop C-2334 Saddle Brook-Bergen 230kV line in to the 230kV ring bus.
 - Install a 69kV ring bus with three (3) 69/4kV transformers.
 - Construct a 69kV network between Hackensack, Hasbrouck Heights, and Spring Valley.
 - **Estimated Cost:** \$135M
- Alternative 2
 - Replace 26kV equipment at Hackensack in kind and rebuild 26kV supply.
 - This alternative is not feasible because it does not meet system planning needs.



Questions?



Appendix

High level M-3 Meeting Schedule

Assumptions	Activity	Timing
	Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
	Stakeholder comments	10 days after Assumptions Meeting
Needs	Activity	Timing
	TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
	Stakeholder comments	10 days after Needs Meeting
Solutions	Activity	Timing
	TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
	Stakeholder comments	10 days after Solutions Meeting
Submission of Supplemental Projects & Local Plan	Activity	Timing
	Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
	Post selected solution(s)	Following completion of DNH analysis
	Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
	Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

3/10/2020 – V1 – Original version posted to pjm.com