

FUEL SECURITY ANALYSIS:

SCENARIO SUMMARIES

PJM Interconnection

January 16, 2019



Introduction

This document contains individual summaries of the 324 scenarios reported in PJM Interconnection's Fuel Security Analysis: A PJM Resilience Initiative.¹ These scenarios are being published to offer a closer look into the results for stakeholders and other interested parties and to help inform the stakeholder process for fuel security in PJM.

The scenario summaries can look similar, so they have been labeled numerically for easy reference. Methodology, analysis, explanation of results and conclusions gleaned from these results can be found in the PJM report Fuel Security Analysis: A PJM Resilience Initiative.²

Reading the Scenario Summaries

PJM applied a common overview template to illustrate the differences in operational impact across scenarios. Each scenario summary includes four sections summarizing the results: scenario description, system overview, hourly zonal average locational marginal price (LMP) and oil inventory.

- Scenario description: The scenario description in the top right-hand corner describes the input assumptions associated with the scenario.
- **System overview:** The system overview, presented on the left side, provides hourly data for generation and demand, demand response, reserve shortage, voltage reduction, load shed and price.
 - Generation and demand summarize the hourly load profile and generation for the entirety of PJM.
 - **Demand response** summarizes hourly demand response deployments. Demand response deployment is a pre-emergency action.
 - Reserve shortage summarizes hourly reserve shortage data. An operational reserve shortage is triggered when 10-minute Synchronized
 Reserves are less than the largest generator in PJM. Depending on system conditions, a reserve shortage will trigger additional emergency
 procedures such as voltage reduction warnings and manual load shed warnings.
 - Voltage reduction summarizes hourly voltage reduction action data. Voltage reduction action enables load reductions by reducing voltages at
 the distribution level. PJM estimates a 1 to 2 percent load reduction resulting from a 5 percent load reduction in transmission zones capable of
 performing a voltage reduction.
 - Load shed summarizes hourly manual load shed action data. Manual load shed action enables zonal or system-wide load shed. This is the last step of all emergency procedure actions.
 - **Price** summarizes hourly LMP across PJM. Prices are products of the input assumptions and do not represent forecasts of actual prices.
- Hourly zonal average LMP: Hourly zonal average LMP data is in the middle of the right side of the model overview. These prices are shown as an indicator for price separation. Prices do not represent forecasts of actual prices.
- **Oil inventory:** Oil inventory statistics are summarized on the bottom right of the model overview. The heat maps indicate, by day, the number of sites where oil inventories were depleted. This site-specific data refers to on-site fuel inventories for individual generating units or shared by a group of generating units.

¹ https://www.pim.com/-/media/library/reports-notices/fuel-security/2018-fuel-security-analysis.ashx.

² Ibid.







































































































































































































































































































































































































































































































































































































































































