



**Generation Interconnection  
Feasibility Study Report  
for  
Queue Project AE2-287  
BRUNSWICK 115 KV  
78 MW Capacity / 130 MW Energy**

July, 2019

## Table of Contents

|        |                                                                   |    |
|--------|-------------------------------------------------------------------|----|
| 1      | Introduction.....                                                 | 7  |
| 2      | Preface.....                                                      | 7  |
| 3      | General .....                                                     | 9  |
| 3.1    | Point of Interconnection .....                                    | 9  |
| 3.1.1  | Primary Point of Interconnection.....                             | 9  |
| 3.1.2  | Secondary Point of Interconnection.....                           | 9  |
| 3.2    | Cost Summary.....                                                 | 10 |
| 4      | Transmission Owner Scope of Work.....                             | 11 |
| 5      | Attachment Facilities .....                                       | 11 |
| 6      | Direct Connection Cost Estimate.....                              | 12 |
| 7      | Non-Direct Connection Cost Estimate.....                          | 12 |
| 8      | System Reinforcement Cost Estimates .....                         | 13 |
| 9      | Schedule.....                                                     | 17 |
| 10     | Transmission Owner Analysis.....                                  | 18 |
| 10.1   | Power Flow Analysis .....                                         | 18 |
| 10.2   | Short Circuit Analysis.....                                       | 18 |
| 10.3   | Stability Analysis.....                                           | 18 |
| 11     | Interconnection Customer Requirements.....                        | 19 |
| 11.1   | System Protection.....                                            | 19 |
| 11.2   | Compliance Issues and Interconnection Customer Requirements ..... | 19 |
| 11.3   | Power Factor Requirements.....                                    | 19 |
| 12     | Revenue Metering and SCADA Requirements .....                     | 20 |
| 12.1   | PJM Requirements .....                                            | 20 |
| 12.1.1 | Meteorological Data Reporting Requirement.....                    | 20 |
| 12.2   | Dominion Requirements.....                                        | 20 |
| 13     | Network Impacts – Primary Point of Interconnection.....           | 21 |
| 13.1   | Generation Deliverability .....                                   | 23 |
| 13.2   | Multiple Facility Contingency .....                               | 23 |
| 13.3   | Contribution to Previously Identified Overloads.....              | 23 |
| 13.4   | Potential Congestion due to Local Energy Deliverability.....      | 26 |
| 13.5   | System Reinforcements.....                                        | 29 |

|         |                        |     |
|---------|------------------------|-----|
| 13.6    | Flow Gate Details..... | 35  |
| 13.6.1  | Index 1 .....          | 36  |
| 13.6.2  | Index 2 .....          | 40  |
| 13.6.3  | Index 3 .....          | 44  |
| 13.6.4  | Index 4 .....          | 47  |
| 13.6.5  | Index 5 .....          | 49  |
| 13.6.6  | Index 6 .....          | 52  |
| 13.6.7  | Index 7 .....          | 55  |
| 13.6.8  | Index 8 .....          | 57  |
| 13.6.9  | Index 9 .....          | 60  |
| 13.6.10 | Index 10.....          | 62  |
| 13.6.11 | Index 11.....          | 64  |
| 13.6.12 | Index 12.....          | 66  |
| 13.6.13 | Index 13.....          | 70  |
| 13.6.14 | Index 14.....          | 73  |
| 13.6.15 | Index 15.....          | 76  |
| 13.6.16 | Index 16.....          | 78  |
| 13.6.17 | Index 17.....          | 81  |
| 13.6.18 | Index 18.....          | 84  |
| 13.6.19 | Index 19.....          | 86  |
| 13.6.20 | Index 20.....          | 89  |
| 13.6.21 | Index 21.....          | 92  |
| 13.6.22 | Index 22.....          | 95  |
| 13.6.23 | Index 23.....          | 98  |
| 13.6.24 | Index 24.....          | 100 |
| 13.6.25 | Index 25.....          | 103 |
| 13.6.26 | Index 26.....          | 105 |
| 13.6.27 | Index 27.....          | 107 |
| 13.6.28 | Index 28.....          | 109 |
| 13.6.29 | Index 29.....          | 111 |
| 13.6.30 | Index 30.....          | 114 |
| 13.6.31 | Index 31.....          | 116 |
| 13.6.32 | Index 32.....          | 119 |

|         |                                                              |     |
|---------|--------------------------------------------------------------|-----|
| 13.6.33 | Index 33.....                                                | 122 |
| 13.6.34 | Index 34.....                                                | 124 |
| 13.6.35 | Index 35.....                                                | 126 |
| 13.6.36 | Index 36.....                                                | 128 |
| 13.6.37 | Index 37.....                                                | 131 |
| 13.6.38 | Index 38.....                                                | 133 |
| 13.6.39 | Index 39.....                                                | 135 |
| 13.6.40 | Index 40.....                                                | 137 |
| 13.6.41 | Index 41.....                                                | 140 |
| 13.6.42 | Index 42.....                                                | 143 |
| 13.7    | Affected Systems .....                                       | 146 |
| 13.7.1  | LG&E .....                                                   | 146 |
| 13.7.2  | MISO.....                                                    | 146 |
| 13.7.3  | TVA.....                                                     | 146 |
| 13.7.4  | Duke Energy Progress .....                                   | 146 |
| 13.7.5  | NYISO.....                                                   | 146 |
| 13.8    | Contingency Descriptions.....                                | 146 |
| 13.9    | Short Circuit .....                                          | 157 |
| 14      | Network Impacts – Secondary Point of Interconnection .....   | 158 |
| 14.1    | Generation Deliverability .....                              | 160 |
| 14.2    | Multiple Facility Contingency .....                          | 160 |
| 14.3    | Contribution to Previously Identified Overloads.....         | 160 |
| 14.4    | Potential Congestion due to Local Energy Deliverability..... | 164 |
| 14.5    | Flow Gate Details.....                                       | 167 |
| 14.5.1  | Index 1 .....                                                | 168 |
| 14.5.2  | Index 2 .....                                                | 170 |
| 14.5.3  | Index 3 .....                                                | 174 |
| 14.5.4  | Index 4 .....                                                | 178 |
| 14.5.5  | Index 5 .....                                                | 180 |
| 14.5.6  | Index 6 .....                                                | 182 |
| 14.5.7  | Index 7 .....                                                | 185 |
| 14.5.8  | Index 8 .....                                                | 188 |
| 14.5.9  | Index 9 .....                                                | 191 |

|         |               |     |
|---------|---------------|-----|
| 14.5.10 | Index 10..... | 194 |
| 14.5.11 | Index 11..... | 196 |
| 14.5.12 | Index 12..... | 198 |
| 14.5.13 | Index 13..... | 201 |
| 14.5.14 | Index 14..... | 204 |
| 14.5.15 | Index 15..... | 206 |
| 14.5.16 | Index 16..... | 209 |
| 14.5.17 | Index 17..... | 212 |
| 14.5.18 | Index 18..... | 214 |
| 14.5.19 | Index 19..... | 217 |
| 14.5.20 | Index 20..... | 221 |
| 14.5.21 | Index 21..... | 224 |
| 14.5.22 | Index 22..... | 227 |
| 14.5.23 | Index 23..... | 230 |
| 14.5.24 | Index 24..... | 232 |
| 14.5.25 | Index 25..... | 234 |
| 14.5.26 | Index 26..... | 236 |
| 14.5.27 | Index 27..... | 238 |
| 14.5.28 | Index 28..... | 240 |
| 14.5.29 | Index 29..... | 243 |
| 14.5.30 | Index 30..... | 245 |
| 14.5.31 | Index 31..... | 248 |
| 14.5.32 | Index 32..... | 251 |
| 14.5.33 | Index 33..... | 253 |
| 14.5.34 | Index 34..... | 255 |
| 14.5.35 | Index 35..... | 257 |
| 14.5.36 | Index 36..... | 260 |
| 14.5.37 | Index 37..... | 262 |
| 14.5.38 | Index 38..... | 265 |
| 14.5.39 | Index 39..... | 267 |
| 14.5.40 | Index 40..... | 269 |
| 14.5.41 | Index 41..... | 272 |
| 14.5.42 | Index 42..... | 275 |

|              |                               |     |
|--------------|-------------------------------|-----|
| 14.5.43      | Index 43.....                 | 277 |
| 14.6         | Affected Systems .....        | 280 |
| 14.6.1       | LG&E .....                    | 280 |
| 14.6.2       | MISO.....                     | 280 |
| 14.6.3       | TVA.....                      | 280 |
| 14.6.4       | Duke Energy Progress .....    | 280 |
| 14.6.5       | NYISO.....                    | 280 |
| 14.7         | Contingency Descriptions..... | 281 |
| 14.8         | Short Circuit .....           | 291 |
| Attachment 1 | – One Line Diagram .....      | 292 |

## 1 Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

## 2 Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

An Interconnection Customer with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

PJM utilizes manufacturer models to ensure the performance of turbines is properly captured during the simulations performed for stability verification and, where applicable, for compliance with low voltage ride through requirements. Turbine manufacturers provide such models to their customers. The list of manufacturer models PJM has already validated is contained in Attachment B of Manual 14G. Manufacturer models may be updated from time to time, for various reasons such as to reflect changes to the control systems or to more accurately represent the capabilities turbines and controls which are currently available in the field. Additionally, as new turbine models are developed, turbine manufacturers provide such new models which must be used in the conduct of these studies. PJM needs adequate time to evaluate the new models in

order to reduce delays to the System Impact Study process timeline for the Interconnection Customer as well as other Interconnection Customers in the study group. Therefore, PJM will require that any Interconnection Customer with a new manufacturer model must supply that model to PJM, along with a \$10,000 fully refundable deposit, no later than three (3) months prior to the starting date of the System Impact Study (See Section 4.3 for starting dates) for the Interconnection Request which shall specify the use of the new model. The Interconnection Customer will be required to submit a completed dynamic model study request form (Attachment B-1 of Manual 14G) in order to document the request for the study.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

### 3 General

The Interconnection Customer (IC) has proposed a Solar generating facility located in Brunswick County, Virginia. The installed facilities will have a total capability of 130 MW with 78 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is June 30, 2022. This study does not imply a Transmission Owner (TO) commitment to this in-service date.

|                                 |                         |
|---------------------------------|-------------------------|
| <b>Queue Number</b>             | <b>AE2-287</b>          |
| <b>Project Name</b>             | <b>BRUNSWICK 115 KV</b> |
| <b>Interconnection Customer</b> |                         |
| <b>State</b>                    | Virginia                |
| <b>County</b>                   | Brunswick               |
| <b>Transmission Owner</b>       | Dominion                |
| <b>MFO</b>                      | 130                     |
| <b>MWE</b>                      | 130                     |
| <b>MWC</b>                      | 78                      |
| <b>Fuel</b>                     | Solar                   |
| <b>Basecase Study Year</b>      | 2022                    |

#### 3.1 Point of Interconnection

##### 3.1.1 Primary Point of Interconnection

AE2-287 “Brunswick 115 kV” will interconnect with the Dominion’s transmission system through a new two breaker bay at the existing 115 kV Brunswick substation which will be adjacent to the transmission right-of-way. This is the primary Point of Interconnection (POI) chose by the IC with the ITO’s transmission system. The IC is responsible for securing right-of-way, permits and constructing the proposed attachment line from the solar facility site to the proposed new switching station. Attachment 1 shows a one-line diagram of the proposed interconnection facilities. The IC may not install any facilities on Dominion’s right-of-way without first obtaining the necessary approval from Dominion Energy.

##### 3.1.2 Secondary Point of Interconnection

The IC requested that a secondary POI “Brunswick – Broadnax 115 kV” be reviewed for network impacts (Option 2). This report does not provide costs for the physical interconnection of Option 2. It was just analyzed for network impacts. Results are shown in the Network Impacts – Secondary Point of Interconnection section of this report.

### 3.2 Cost Summary

The AE2-287 project will be responsible for the following costs:

| Description                            | Total Cost                          |
|----------------------------------------|-------------------------------------|
| Attachment Facilities                  | \$ 1,700,000                        |
| Direct Connection Network Upgrade      | \$ 3,600,000                        |
| Non Direct Connection Network Upgrades | \$ TBD in facilities phase          |
| Total Costs                            | \$ 5,300,000 + remote terminal work |

In addition, the AE2-287 project may be responsible for a contribution to the following costs

| Description     | Total Cost     |
|-----------------|----------------|
| System Upgrades | \$ 636,432,000 |

Cost allocations for these upgrades will be provided in the System Impact Study Report.

## 4 Transmission Owner Scope of Work

Dominion assessed the impact of the proposed Queue Project AE2-287 was evaluated as a 78.0 MW Capacity (130.0 MW Energy) injection at the existing Brunswick 115 kV substation in the Dominion Transmission System, for compliance with NERC Reliability Criteria on Dominion Transmission System. The system was assessed using the summer 2022 AE2 case provided to Dominion by PJM. When performing a generation analysis, Dominion's main analysis will be load flow study results under single contingency (both normal and stressed system conditions). Dominion Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under normal and stressed system conditions. A full listing of Dominion's Planning Criteria and interconnection requirements can be found in the Company's Facility Connection Requirements which are publicly available at: <http://www.dominionenergy.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically in Planning Studies NERC Category C Contingency Conditions (Bus Fault, Tower Line, N-1-1, and Stuck Breaker scenarios) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For Dominion Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating.

The required Attachment Facilities, Direct Connection and Non-Direct Connection work for the interconnection of the AE2-287 generation project to the Dominion Transmission System is detailed in the following sections. The associated one-line with the generation project attachment facilities and primary direct and non-direct connection are shown in Attachment 1.

Note that the ITO findings were made from a conceptual review of this project. A more detailed review of the connection facilities and their cost will be identified in a future study phases. Further note that the cost estimate data contained in this document should be considered high level estimates since it was produced without a detailed engineering review. The applicant will be responsible for the actual cost of construction. ITO herein reserves the right to return to any issues in this document and, upon appropriate justification, request additional monies to complete any reinforcements to the transmission systems.

## 5 Attachment Facilities

To accommodate the proposed AE2-287 Project, Dominion Energy will install one span of overhead 115 kV line to the point of interconnection ("POI") including 115 kV interconnection metering. The total preliminary cost estimate for the Attachment work is given in the table below. These costs do not include CIAC Tax Gross-up.

| Description           | Total Cost |
|-----------------------|------------|
| Substation (Metering) | \$ 500,000 |

|                                        |                     |
|----------------------------------------|---------------------|
| <b>Transmission (one span)</b>         | <b>\$ 1,200,000</b> |
| <b>Total Attachment Facility Costs</b> | <b>\$ 1,700,000</b> |

It is estimated to take 18-24 months to complete this work upon execution of an Interconnection Construction Service Agreement (ICSA). These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. See Attachment 1.

## 6 Direct Connection Cost Estimate

To accommodate the proposed AE2-287 Project, Dominion Energy will build a two breaker bay at Brunswick 115 kV substation to allow for the proposed interconnection. The total preliminary cost estimate for the Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

| <b>Description</b>                              | <b>Total Cost</b>   |
|-------------------------------------------------|---------------------|
| <b>Two Breaker Bay and Associated Equipment</b> | <b>\$ 2,000,000</b> |
| <b>Transmission (one span)</b>                  | <b>\$ 1,800,000</b> |
| <b>Total Direct Connection Facility Costs</b>   | <b>\$ 3,800,000</b> |

It is estimated to take 24-30 months to complete this work upon execution of an Interconnection Construction Service Agreement (ICSA). These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. See Attachment 1.

## 7 Non-Direct Connection Cost Estimate

The total preliminary cost estimate for the Non-Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

| <b>Description</b>                                | <b>Total Cost</b>                 |
|---------------------------------------------------|-----------------------------------|
| <b>Remote Terminal Work</b>                       | <b>\$ TBD in facilities phase</b> |
| <b>Total Non-Direct Connection Facility Costs</b> | <b>\$ TBD in facilities phase</b> |

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The

review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

## 8 System Reinforcement Cost Estimates

| Upgrade Description                                                                                                                                                                | Cost         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| dom-017 (76) : Rebuild 13.7 miles of 230 kV Line 246 from Earleys to Nucor Tap with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$20,550,000<br>Time Estimate : 30-36 Months       | \$20,550,000 |
| dom-105 (215) : Rebuild 34.83 miles of 230 kV Line 2012 from Northhampton to Earleys with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$87,075,000<br>Time Estimate : 48-60 Months | \$87,075,000 |
| dom-020 (81) : Add additional 230/115 kV transformer at Carolina substation.<br>Project Type : CON<br>Cost : \$6,000,000<br>Time Estimate : 16-18 Months                           | \$18,000,000 |
| dom-064 (154) : Rebuild 13.35 miles of 230 kV Line 246 from Nucor Tap to AA1-138 Tap with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$20,025,000<br>Time Estimate : 30-36 Months | \$20,025,000 |
| dom-050 (132) : Rebuild 2.47 miles of 230 kV Line 238 from AE2-033 TAP to Sapony with 2-795 150C ACSR.<br>Project Type : FAC<br>Cost : \$3,705,000<br>Time Estimate : 30-36 Months | \$3,705,000  |
| dom-051 (134) : Rebuild 11.79 miles of 230 kV Line 238 from Sapony to Carson with 2-795 150C ACSR.<br>Project Type : FAC<br>Cost : \$17,685,000<br>Time Estimate : 30-36 Months    | \$17,685,000 |
| dom-078 (174) : Rebuild 7.47 miles of 230 kV Line 249 from Carson to Chaparral with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$18,675,000<br>Time Estimate : 30-36 Months       | \$18,675,000 |
| dom-079 (175) : Rebuild 2.86 miles of 230 kV Line 249 from Chaparral to Locks with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$7,150,000<br>Time Estimate : 30-36 Months         | \$7,150,000  |

| Upgrade Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Cost         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p>dom-107 (219) : Rebuild 4.06 miles of 230 kV Line 2060 from Carolina to Roanoke Valley with 2-636 ACSR.<br/> Project Type : FAC<br/> Cost : \$10,150,000<br/> Time Estimate : 30-36 Months</p>                                                                                                                                                                                                                                                                   | \$10,150,000 |
| <p>dom-127 (252) : Rebuild 7.95 miles of 115 kV Line 54 from Woodland to Aulander DP with 636 ACSR.<br/> Project Type : FAC<br/> Cost : \$10,335,000<br/> Time Estimate : 30-36 Months</p>                                                                                                                                                                                                                                                                          | \$10,335,000 |
| <p><u>DVP</u><br/> dom-002 (53) : For DEV portion, rebuild 4.7 miles of 115 kV Line 45 from Kerr Dam to GW King Tap with 768 ACSS.<br/> Project Type : FAC<br/> Cost : \$6,123,000<br/> Time Estimate : 30-36 Months</p> <p><u>CPLE</u><br/> NonPJMArea : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.<br/> Project Type : FAC<br/> Cost : \$0<br/> Time Estimate : N/A Months</p>          | \$6,123,000  |
| <p><u>DVP</u><br/> dom-005 (58) : For DEV portion, rebuild 3.3 miles of 230 kV Line 2181 from Nash to Parmount with 2-636 ACSR.<br/> Project Type : FAC<br/> Cost : \$8,250,000<br/> Time Estimate : 30-36 Months</p> <p><u>CPLE</u><br/> NonPJMArea : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.<br/> Project Type : FAC<br/> Cost : \$0<br/> Time Estimate : N/A Months</p>             | \$8,250,000  |
| <p><u>DVP</u><br/> dom-003 (56) : For DEV portion, rebuild 4.13 miles of 230 kV Line 2058 from Hathaway to Rocky Mountain with 2-636 ACSR.<br/> Project Type : FAC<br/> Cost : \$10,325,000<br/> Time Estimate : 30-36 Months</p> <p><u>CPLE</u><br/> NonPJMArea : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.<br/> Project Type : FAC<br/> Cost : \$0<br/> Time Estimate : N/A Months</p> | \$10,325,000 |

| Upgrade Description                                                                                                                                                                                                                                                                    | Cost         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| dom-128 (253) : Rebuild 1.85 miles of 115 kV Line 54 from Aulander DP to Earleys with 636 ACSR.<br>Project Type : FAC<br>Cost : \$2,405,000<br>Time Estimate : 30-36 Months                                                                                                            | \$2,405,000  |
| <u>DVP</u><br>No Reinforcement Needed. Not a valid violation<br><br><u>CPL</u><br>NonPJM Area : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.<br>Project Type : FAC<br>Cost : \$0<br>Time Estimate : N/A Months | \$0          |
| dom-062 (151) : Rebuild 4.06 miles of 230 kV Line 239 from Lakeview to Hornertown with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$5,278,000<br>Time Estimate : 30-36 Months                                                                                                         | \$5,278,000  |
| dom-034 (100) : Rebuild 15.51 miles of 230 kV Line 298 from Buckingham to Brema with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$23,265,000<br>Time Estimate : 30-36 Months                                                                                                          | \$23,265,000 |
| dom-035 (102) : Rebuild 12.76 miles of 230 kV Line 298 from Buckingham to Farmville with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$19,140,000<br>Time Estimate : 30-36 Months                                                                                                      | \$19,140,000 |
| dom-071 (165) : Rebuild 0.16 miles of Line 2028 from Brema to Brema Dist with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$500,000<br>Time Estimate : 30-36 Months                                                                                                                    | \$500,000    |
| dom-036 (104) : Rebuild 4.5 miles of 230 kV Line 2003 from Harrowgate to Tyler with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$11,250,000<br>Time Estimate : 30-36 Months                                                                                                           | \$11,250,000 |
| dom-037 (106) : Rebuild 12.3 miles of 230 kV Line 2003 from Poe to Harrowgate with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$30,750,000<br>Time Estimate : 30-36 Months                                                                                                            | \$30,750,000 |
| dom-065 (156) : Rebuild 17.3 miles of 230 kV Line 246 from AA1-138 Tap to Suffolk with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$25,950,000<br>Time Estimate : 36-40 Months                                                                                                        | \$25,950,000 |

| Upgrade Description                                                                                                                                                                     | Cost         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| dom-076 (172) : Rebuild 12.8 miles of 230 kV Line 2056 from AD1-057 Tap to Hathaway with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$19,200,000<br>Time Estimate : 30-36 Months       | \$19,200,000 |
| dom-072 (166) : Rebuild 18.94 miles of 230 kV Line 2028 from Brema Dist to Mt Eagle with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$47,350,000<br>Time Estimate : 36-40 Months       | \$47,350,000 |
| dom-049 (129) : Rebuild 16.0 miles of 230 kV Line 254 from AB2-100 Tap to Lakeview with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$24,000,000<br>Time Estimate : 30-36 Months        | \$24,000,000 |
| dom-048 (127) : Rebuild 2.0 miles of 230 kV Line 254 from Clubhouse to AB2-100 Tap with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$3,000,000<br>Time Estimate : 30-36 Months         | \$3,000,000  |
| dom-073 (168) : Rebuild 6.47 miles of 230 kV Line 2028 from Mt Eagle to Charlottesville with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$16,175,000<br>Time Estimate : 30-36 Months   | \$16,175,000 |
| dom-120 (239) : Rebuild 12.68 miles of 230 kV Line 2002 from Carson to Poe with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$31,700,000<br>Time Estimate : 30-36 Months                | \$31,700,000 |
| dom-089 (190) : Add additional 230/115 kV transformer at Farmville substation<br>Project Type : CON<br>Cost : \$6,000,000<br>Time Estimate : 16-18 Months                               | \$12,000,000 |
| dom-077 (173) : Rebuild 16 miles of 230 kV Line 2056 from Hornertown to AD1-057 TAP with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$24,000,000<br>Time Estimate : 36-40 Months       | \$24,000,000 |
| dom-143 (272) : Rebuild 0.76 miles of 230 kV Line 2181 from Hathaway to Nash with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$1,900,000<br>Time Estimate : 30-36 Months               | \$1,900,000  |
| dom-106 (217) : Rebuild 2.87 miles of 230 kV Line 2012 from Roanoke Valley to Northhampton with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$7,175,000<br>Time Estimate : 30-36 Months | \$7,175,000  |

| Upgrade Description                                                                                                                                                                     | Cost                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| dom-080 (177) : Rebuild 6.65 miles of 115 kV Line 151 from Plywood to Sedge Hill with 636 ACSR.<br>Project Type : FAC<br>Cost : \$8,645,000<br>Time Estimate : 30-36 Months             | \$8,645,000          |
| dom-010 (67) : Add additional 230/115 kV transformer at Clubhouse substation.<br>Project Type : CON<br>Cost : \$6,000,000<br>Time Estimate : 16-18 Months                               | \$30,000,000         |
| dom-047 (124) : Rebuild 14.28 miles of 230 kV Line 238 from Clubhouse to AE2-033 Tap with 2-795 150C ACSR.<br>Project Type : FAC<br>Cost : \$21,420,000<br>Time Estimate : 30-36 Months | \$21,420,000         |
| dom-012 (70) : Rebuild 12.4 miles of 230 kV Line 259 from Chesterfield to Basin with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$31,000,000<br>Time Estimate : 30-36 Months           | \$31,000,000         |
| dom-061 (149) : Rebuild 1.37 miles of 230 kV Line 2141 from Lakeview to Carolina with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$1,781,000<br>Time Estimate : 30-36 Months           | \$1,781,000          |
| dom-118 (235) : Replace Breaker Leads at Pleasant Hill and Carolina substations.<br>Project Type : FAC<br>Cost : \$500,000<br>Time Estimate : 30-36 Months                              | \$500,000            |
| <b>TOTAL COST</b>                                                                                                                                                                       | <b>\$636,432,000</b> |

## 9 Schedule

The schedule for the required Network Impact Reinforcements will be more clearly identified in future study phases. The estimate elapsed time to complete each of the required reinforcements is identified in the “System Reinforcements” section of the report.

## 10 Transmission Owner Analysis

### 10.1 Power Flow Analysis

PJM performed a power flow analysis of the transmission system using a 2022 summer peak load flow model and the results were verified by Dominion. Additionally, Dominion performed an analysis of its transmission system. At the Primary POI, the AE2-287 project contributes to overloads on the Dominion transmission system as shown in the “Network Impact – Primary Point of Interconnection” section of the report. The estimated cost of system reinforcements necessary to mitigate these overloads is also provided. At the Secondary POI, the AE2-287 project contributes to overloads on the Dominion transmission system as shown in the “Network Impacts – Secondary Point of Interconnection” section of the report. Cost estimates are not provided for the secondary POI.

### 10.2 Short Circuit Analysis

PJM performed a short circuit analysis and the results were verified by Dominion. The connection of AE2-287 project to the system does not result in any newly overdutied circuit breakers on the Dominion transmission system and does not have a significant fault current contribution to existing overdutied circuit breakers

### 10.3 Stability Analysis

PJM will complete a dynamic stability analysis, if necessary, as part of the System Impact Study. The results of this analysis will be reviewed by Dominion. Should stability concerns be identified in PJM’s study, Dominion will develop appropriate system reinforcement(s) and included the estimated cost of any reinforcement(s) in Dominion’s System Impact Study report.

## 11 Interconnection Customer Requirements

### 11.1 System Protection

The IC must design its Customer Facilities in accordance with all applicable standards, including the standards in Dominion's "Dominion Energy Electric Transmission Generator Interconnection Requirements" documented in Dominion's Facility Interconnection Requirements "Exhibit C" located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>. Preliminary Protection requirements will be provided as part of the Facilities Study. Detailed Protection Requirements will be provided once the project enters the construction phase.

### 11.2 Compliance Issues and Interconnection Customer Requirements

The proposed Customer Facilities must be designed in accordance with Dominion's "Dominion's Facility Interconnection Requirements" document located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>. In particular, the IC is responsible for the following:

1. The purchase and installation of a fully rated protection device (circuit breaker, circuit switcher, fuse) to protect the IC's GSU transformer(s).
2. The purchase and installation of the minimum required Dominion generation interconnection relaying and control facilities as described in the System Protection noted above. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.
3. The purchase and installation of supervisory control and data acquisition ("SCADA") equipment to provide information in a compatible format to the Dominion Transmission System Control Center.
4. Compliance with the Dominion and PJM generator power factor and voltage control requirements.

The GSU(s) associated with the IC queue request shall meet the grounding requirements as noted in Dominion's "Dominion's Facility Interconnection Requirements" document located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>.

The IC will also be required to meet all PJM, SERC, and NERC reliability criteria and operating procedures for standards compliance. For example, the IC will need to properly locate and report the over and under voltage and over and under frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and SERC audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the Dominion system.

### 11.3 Power Factor Requirements

The IC shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformer(s) connected to the Dominion transmission system.

## 12 Revenue Metering and SCADA Requirements

### 12.1 PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

#### 12.1.1 Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

### 12.2 Dominion Requirements

See Section 3.4.6 "Metering and Telecommunications" of Dominion's "Dominion's Facility Interconnection Requirements" document located at: <https://www.dominionenergy.com/company/moving-energy/electric-transmission-access>.

### **13 Network Impacts – Primary Point of Interconnection**

The Queue Project AE2-287 was evaluated as a 130.0 MW (Capacity 78.0 MW) injection the Brunswick 115kV substation in the Dominion area. Project AE2-287 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE2-287 was studied with a commercial probability of 53%. Potential network impacts were as follows:

## Summer Peak Load Flow

### 13.1 Generation Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS     | TO BUS AREA | CKT ID | CONT NAME               | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|------------|-------------|--------|-------------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091179 | 314299    | 6HARROWG    | DVP           | 314263  | 6TYLER1    | DVP         | 1      | DVP_P1-2: LN 563        | single | 441.8      | 95.09                 | 96.44                  | DC    | 6.0       |
| 8091176 | 314331    | 6POE        | DVP           | 314299  | 6HARROWG   | DVP         | 1      | DVP_P1-2: LN 563        | single | 441.8      | 95.12                 | 96.46                  | DC    | 6.0       |
| 8090539 | 314559    | 3CAROLNA    | DVP           | 314561  | 6CAROLNA   | DVP         | 1      | DVP_P1-2: LN 1001       | single | 239.89     | 97.34                 | 100.2                  | DC    | 6.85      |
| 8090197 | 314562    | 3CLUBHSE    | DVP           | 314563  | 6CLUBHSE   | DVP         | 1      | Base Case               | single | 176.81     | 91.4                  | 109.87                 | DC    | 32.65     |
| 8091025 | 314583    | 6LAKEVEW    | DVP           | 314579  | 6HORNRTN   | DVP         | 1      | DVP_P1-2: LN 238-B      | single | 441.8      | 98.44                 | 101.81                 | DC    | 14.88     |
| 8090825 | 314677    | 6BUCKING    | DVP           | 314747  | 6BREMO     | DVP         | 1      | DVP_P1-2: LN 563        | single | 571.52     | 96.0                  | 97.65                  | DC    | 9.4       |
| 8090512 | 314691    | 3FARMVIL    | DVP           | 314692  | 6FARMVIL   | DVP         | 2      | DVP_P1-3: 6FARMVIL-TX#4 | single | 182.64     | 98.46                 | 103.46                 | DC    | 9.14      |
| 8090842 | 314692    | 6FARMVIL    | DVP           | 314677  | 6BUCKING   | DVP         | 1      | DVP_P1-2: LN 563        | single | 559.3      | 94.61                 | 96.3                   | DC    | 9.41      |
| 8090501 | 314712    | 3OTTER R    | DVP           | 314666  | 3ALTVSTA   | DVP         | 1      | DVP_P1-2: LN 296-A      | single | 224.66     | 79.45                 | 81.21                  | DC    | 3.97      |
| 8090503 | 314712    | 3OTTER R    | DVP           | 314666  | 3ALTVSTA   | DVP         | 1      | DVP_P1-2: LN 296-B      | single | 224.66     | 74.55                 | 76.31                  | DC    | 3.97      |
| 8090781 | 314747    | 6BREMO      | DVP           | 313867  | 6BREMODIST | DVP         | 1      | DVP_P1-2: LN 91-B       | single | 661.76     | 99.08                 | 100.01                 | DC    | 6.2       |
| 8090547 | 924510    | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW   | DVP         | 1      | DVP_P1-2: LN 238-B      | single | 375.06     | 98.45                 | 105.6                  | DC    | 26.85     |

### 13.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME         | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|-------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720611 | 314282    | 6CARSON      | DVP           | 314331  | 6POE         | DVP         | 1      | DVP_P4-2: 24972-4 | breaker | 830.0      | 99.34                 | 103.04                 | DC    | 30.7      |
| 7720320 | 314299    | 6HARROWG     | DVP           | 314263  | 6TYLER1      | DVP         | 1      | DVP_P4-2: 562T563 | breaker | 541.0      | 97.09                 | 97.93                  | DC    | 10.01     |
| 7720318 | 314331    | 6POE         | DVP           | 314299  | 6HARROWG     | DVP         | 1      | DVP_P4-2: 562T563 | breaker | 541.0      | 97.11                 | 97.95                  | DC    | 10.01     |
| 7720432 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 1      | DVP_P4-2: H2T2068 | breaker | 264.5      | 94.18                 | 96.38                  | DC    | 12.95     |
| 7720473 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2      | DVP_P4-2: 3202    | breaker | 279.1      | 90.41                 | 92.74                  | DC    | 14.47     |
| 7720474 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2      | DVP_P4-2: H1T2068 | breaker | 279.1      | 89.02                 | 91.11                  | DC    | 12.91     |

### 13.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME               | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|-------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 8091216 | 313825    | 3PLYWOOD     | DVP           | 314696  | 3SEGE HILL   | DVP         | 1      | DVP_P1-2: LN 45         | single  | 141.0      | 100.66                | 104.59                 | DC    | 5.55      |
| 8090455 | 313845    | 6HATHAWAY    | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 2181       | single  | 374.0      | 146.66                | 148.34                 | DC    | 6.3       |
| 8090460 | 313845    | 6HATHAWAY    | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 218-A      | single  | 374.0      | 103.24                | 104.32                 | DC    | 4.04      |
| 8090698 | 313845    | 6HATHAWAY    | DVP           | 314591  | 6NASH        | DVP         | 1      | DVP_P1-2: LN 2058       | single  | 449.32     | 131.2                 | 132.63                 | DC    | 6.42      |
| 8090807 | 313867    | 6BREMODIST   | DVP           | 314765  | 6MTEAGLE     | DVP         | 1      | DVP_P1-2: LN 556        | single  | 661.76     | 105.25                | 106.25                 | DC    | 6.66      |
| 7720530 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS     | DVP         | 1      | DVP_P4-2: 23872         | breaker | 658.0      | 109.81                | 111.54                 | DC    | 25.15     |
| 7720531 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS     | DVP         | 1      | DVP_P4-2: 238T2002      | breaker | 658.0      | 109.62                | 111.34                 | DC    | 25.14     |
| 8090926 | 314282    | 6CARSON      | DVP           | 314285  | 6CHRL249     | DVP         | 1      | DVP_P1-2: LN 563        | single  | 559.3      | 120.62                | 121.75                 | DC    | 8.14      |
| 8091007 | 314285    | 6CHRL249     | DVP           | 314316  | 6LOCKS       | DVP         | 1      | DVP_P1-2: LN 563        | single  | 559.3      | 116.95                | 118.09                 | DC    | 8.14      |
| 8090289 | 314287    | 6CHESTF B    | DVP           | 314276  | 6BASIN       | DVP         | 1      | DVP_P1-2: LN 563        | single  | 449.32     | 159.79                | 160.34                 | DC    | 5.38      |
| 8090290 | 314287    | 6CHESTF B    | DVP           | 314276  | 6BASIN       | DVP         | 1      | DVP_P1-2: LN 217        | single  | 449.32     | 158.03                | 159.24                 | DC    | 5.47      |
| 7720319 | 314299    | 6HARROWG     | DVP           | 314263  | 6TYLER1      | DVP         | 1      | DVP_P4-2: 24972-4       | breaker | 541.0      | 128.63                | 133.01                 | DC    | 23.65     |
| 7720317 | 314331    | 6POE         | DVP           | 314299  | 6HARROWG     | DVP         | 1      | DVP_P4-2: 24972-4       | breaker | 541.0      | 128.65                | 133.02                 | DC    | 23.65     |
| 7720267 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P4-2: 239T2141      | breaker | 830.0      | 133.82                | 138.96                 | DC    | 50.43     |
| 7720268 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P4-2: 201262        | breaker | 830.0      | 129.93                | 135.22                 | DC    | 43.82     |
| 8090680 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P1-2: LN 2060       | single  | 678.68     | 104.72                | 108.55                 | DC    | 26.12     |
| 8090681 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P1-2: LN 2012       | single  | 678.68     | 104.66                | 108.49                 | DC    | 26.12     |
| 8242047 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P7-1: LN 56-2060    | tower   | 830.0      | 131.37                | 136.83                 | DC    | 45.34     |
| 8242048 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P7-1: LN 56-2012    | tower   | 830.0      | 131.31                | 136.77                 | DC    | 45.34     |
| 7720197 | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P4-2: 102952        | breaker | 288.6      | 146.51                | 148.66                 | DC    | 13.68     |
| 8090536 | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-3: 6CLUBHSE-TX#1 | single  | 239.89     | 109.57                | 117.92                 | DC    | 20.04     |
| 7720548 | 314561    | 6CAROLNA     | DVP           | 314599  | 6ROA VAL     | DVP         | 1      | DVP_P4-2: 23872         | breaker | 671.0      | 108.39                | 110.08                 | DC    | 25.15     |
| 7720549 | 314561    | 6CAROLNA     | DVP           | 314599  | 6ROA VAL     | DVP         | 1      | DVP_P4-2: 238T2002      | breaker | 671.0      | 108.2                 | 109.89                 | DC    | 25.14     |
| 7719964 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P4-6: CAROLIN T122  | breaker | 208.6      | 201.55                | 236.24                 | DC    | 72.36     |
| 7719965 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P4-2: 2202          | breaker | 208.6      | 196.85                | 231.28                 | DC    | 71.81     |
| 8090192 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P1-2: LN 130-A      | single  | 182.64     | 126.13                | 149.56                 | DC    | 42.79     |
| 8090193 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P1-3: 6CAROLNA-TX#4 | single  | 182.64     | 122.67                | 141.45                 | DC    | 34.29     |
| 7720045 | 314563    | 6CLUBHSE     | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P4-2: 239T2141      | breaker | 637.0      | 163.0                 | 170.88                 | DC    | 50.45     |
| 7720046 | 314563    | 6CLUBHSE     | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P4-2: 205602        | breaker | 637.0      | 159.94                | 166.79                 | DC    | 43.63     |
| 7720287 | 314563    | 6CLUBHSE     | DVP           | 924510  | AB2-100 TAP  | DVP         | 1      | DVP_P4-2: 23872         | breaker | 427.0      | 126.93                | 137.41                 | DC    | 44.75     |
| 7720288 | 314563    | 6CLUBHSE     | DVP           | 924510  | AB2-100 TAP  | DVP         | 1      | DVP_P4-2: 238T2002      | breaker | 427.0      | 126.93                | 137.41                 | DC    | 44.74     |
| 8090520 | 314563    | 6CLUBHSE     | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P1-2: LN 2056-A     | single  | 598.78     | 115.39                | 119.67                 | DC    | 26.16     |

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME              | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC/DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|--------------|-------------|--------|------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 8090521 | 314563    | 6CLUBHSE    | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P1-2: LN 2056-B    | single  | 598.78     | 111.36                | 115.64                 | DC    | 26.16     |
| 8090525 | 314563    | 6CLUBHSE    | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | Base Case              | single  | 598.78     | 103.14                | 107.08                 | DC    | 23.85     |
| 8241959 | 314563    | 6CLUBHSE    | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P7-1: LN 2058-2181 | tower   | 637.0      | 162.37                | 168.89                 | DC    | 41.51     |
| 8090416 | 314569    | 6EARLEYS    | DVP           | 314575  | 6NUCO TP     | DVP         | 1      | DVP_P1-2: LN 2092      | single  | 571.52     | 124.38                | 125.6                  | DC    | 7.0       |
| 8090417 | 314569    | 6EARLEYS    | DVP           | 314575  | 6NUCO TP     | DVP         | 1      | DVP_P1-2: LN 2131      | single  | 571.52     | 123.6                 | 124.82                 | DC    | 7.01      |
| 8090469 | 314575    | 6NUCO TP    | DVP           | 919140  | AA1-138 TAP  | DVP         | 1      | DVP_P1-2: LN 2092      | single  | 571.52     | 117.99                | 119.21                 | DC    | 7.0       |
| 8090470 | 314575    | 6NUCO TP    | DVP           | 919140  | AA1-138 TAP  | DVP         | 1      | DVP_P1-2: LN 2131      | single  | 571.52     | 117.21                | 118.44                 | DC    | 7.01      |
| 8090712 | 314579    | 6HORNRTN    | DVP           | 934330  | AD1-057 TAP  | DVP         | 1      | DVP_P1-2: LN 238-B     | single  | 441.8      | 125.38                | 128.73                 | DC    | 14.81     |
| 8090713 | 314579    | 6HORNRTN    | DVP           | 934330  | AD1-057 TAP  | DVP         | 1      | DVP_P1-2: LN 238-A     | single  | 441.8      | 114.71                | 116.61                 | DC    | 8.4       |
| 8090229 | 314583    | 6LAKEVEW    | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-2: LN 2056-A    | single  | 375.06     | 143.27                | 144.86                 | DC    | 5.96      |
| 8090230 | 314583    | 6LAKEVEW    | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-2: LN 238-B     | single  | 375.06     | 138.98                | 142.14                 | DC    | 11.84     |
| 8090859 | 314591    | 6NASH       | DVP           | 304226  | 6PA-RMOUNT#4 | CPL         | 1      | DVP_P1-2: LN 2058      | single  | 470.0      | 119.98                | 121.35                 | DC    | 6.42      |
| 7720551 | 314599    | 6ROA VAL    | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P4-2: 23872        | breaker | 671.0      | 108.34                | 110.03                 | DC    | 25.15     |
| 7720552 | 314599    | 6ROA VAL    | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P4-2: 238T2002     | breaker | 671.0      | 108.15                | 109.84                 | DC    | 25.14     |
| 7720570 | 314600    | 3PLHITP     | DVP           | 314559  | 3CAROLNA     | DVP         | 1      | DVP_P4-2: 239T2141     | breaker | 351.0      | 100.3                 | 107.1                  | DC    | 23.86     |
| 8242174 | 314625    | 3AULANDR    | DVP           | 314568  | 3EARLEYS     | DVP         | 1      | DVP_P7-1: LN 56-2060   | tower   | 136.0      | 106.65                | 108.86                 | DC    | 6.61      |
| 8242175 | 314625    | 3AULANDR    | DVP           | 314568  | 3EARLEYS     | DVP         | 1      | DVP_P7-1: LN 56-2012   | tower   | 136.0      | 106.36                | 108.56                 | DC    | 6.61      |
| 8242142 | 314626    | 3WOODLND    | DVP           | 314625  | 3AULANDR     | DVP         | 1      | DVP_P7-1: LN 56-2060   | tower   | 136.0      | 111.8                 | 114.0                  | DC    | 6.61      |
| 8242143 | 314626    | 3WOODLND    | DVP           | 314625  | 3AULANDR     | DVP         | 1      | DVP_P7-1: LN 56-2012   | tower   | 136.0      | 111.58                | 113.78                 | DC    | 6.61      |
| 7720386 | 314677    | 6BUCKING    | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P4-2: 556T591      | breaker | 699.0      | 115.19                | 116.26                 | DC    | 16.76     |
| 7720387 | 314677    | 6BUCKING    | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P4-2: 511T556      | breaker | 699.0      | 115.19                | 116.26                 | DC    | 16.76     |
| 7720388 | 314677    | 6BUCKING    | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P4-2: 511T591      | breaker | 699.0      | 115.12                | 116.19                 | DC    | 16.76     |
| 8090823 | 314677    | 6BUCKING    | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P1-2: LN 556       | single  | 571.52     | 109.8                 | 111.52                 | DC    | 10.05     |
| 8090511 | 314691    | 3FARMVIL    | DVP           | 314692  | 6FARMVIL     | DVP         | 2      | DVP_P1-2: LN 235-A-A   | single  | 182.64     | 110.93                | 115.79                 | DC    | 8.88      |
| 7720401 | 314692    | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P4-2: 511T556      | breaker | 684.0      | 113.49                | 114.59                 | DC    | 16.78     |
| 7720402 | 314692    | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P4-2: 556T591      | breaker | 684.0      | 113.49                | 114.59                 | DC    | 16.78     |
| 7720403 | 314692    | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P4-2: 511T591      | breaker | 684.0      | 113.42                | 114.52                 | DC    | 16.78     |
| 8090840 | 314692    | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P1-2: LN 556       | single  | 559.3      | 108.66                | 110.42                 | DC    | 10.06     |
| 8090787 | 314697    | 6SEDGE HILL | DVP           | 927250  | AC1-221 TAP  | DVP         | 1      | DVP_P1-2: LN 556       | single  | 674.92     | 115.67                | 116.74                 | DC    | 8.66      |
| 7720095 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P4-6: CAROLIN T122 | breaker | 199.0      | 160.25                | 163.29                 | DC    | 13.37     |
| 7720096 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P4-2: 2202         | breaker | 199.0      | 150.53                | 153.24                 | DC    | 11.93     |
| 8090852 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P1-2: LN 296-B     | single  | 199.0      | 123.28                | 126.86                 | DC    | 7.12      |

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME              | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|--------------|-------------|--------|------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 8090853 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P1-2: LN 6002_FSA  | single  | 199.0      | 123.4                 | 126.74                 | DC    | 6.66      |
| 8090857 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | Base Case              | single  | 199.0      | 111.29                | 114.64                 | DC    | 6.66      |
| 8241964 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P7-1: LN 22-90-A   | tower   | 199.0      | 165.33                | 168.14                 | DC    | 12.34     |
| 8241965 | 314702    | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P7-1: LN 22-90-B   | tower   | 199.0      | 153.84                | 156.64                 | DC    | 12.34     |
| 8090779 | 314747    | 6BREMO      | DVP           | 313867  | 6BREMODIST   | DVP         | 1      | DVP_P1-2: LN 556       | single  | 661.76     | 107.57                | 108.58                 | DC    | 6.66      |
| 8090890 | 314765    | 6MTEAGLE    | DVP           | 314749  | 6CHARLV      | DVP         | 1      | DVP_P1-2: LN 556       | single  | 661.76     | 101.89                | 102.9                  | DC    | 6.66      |
| 8090480 | 919140    | AA1-138 TAP | DVP           | 314537  | 6SUFFOLK     | DVP         | 1      | DVP_P1-2: LN 2092      | single  | 571.52     | 117.97                | 119.2                  | DC    | 7.0       |
| 8090481 | 919140    | AA1-138 TAP | DVP           | 314537  | 6SUFFOLK     | DVP         | 1      | DVP_P1-2: LN 2131      | single  | 571.52     | 117.19                | 118.42                 | DC    | 7.01      |
| 7720139 | 924510    | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW     | DVP         | 1      | DVP_P4-2: 238T2002     | breaker | 427.0      | 144.18                | 154.66                 | DC    | 44.74     |
| 7720140 | 924510    | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW     | DVP         | 1      | DVP_P4-2: 23872        | breaker | 427.0      | 144.16                | 154.64                 | DC    | 44.75     |
| 8090748 | 927250    | AC1-221 TAP | DVP           | 304070  | 6PERSON230 T | CPL         | 1      | DVP_P1-2: LN 556       | single  | 718.0      | 119.55                | 120.55                 | DC    | 8.66      |
| 8090610 | 934330    | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY    | DVP         | 1      | DVP_P1-2: LN 238-B     | single  | 441.8      | 133.67                | 137.02                 | DC    | 14.81     |
| 8090611 | 934330    | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY    | DVP         | 1      | DVP_P1-2: LN 238-A     | single  | 441.8      | 123.2                 | 125.11                 | DC    | 8.4       |
| 7719986 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P4-2: 239T2141     | breaker | 637.0      | 181.28                | 189.17                 | DC    | 50.45     |
| 7719987 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P4-2: 201262       | breaker | 637.0      | 170.46                | 177.34                 | DC    | 43.83     |
| 8090363 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P1-2: LN 2056-A    | single  | 598.78     | 121.47                | 125.79                 | DC    | 26.16     |
| 8090364 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P1-2: LN 2060      | single  | 598.78     | 119.85                | 124.18                 | DC    | 26.13     |
| 8090368 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | Base Case              | single  | 598.78     | 109.27                | 113.22                 | DC    | 23.85     |
| 8241943 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P7-1: LN 2058-2181 | tower   | 637.0      | 179.26                | 185.78                 | DC    | 41.51     |
| 8241944 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P7-1: LN 56-2060   | tower   | 637.0      | 172.74                | 179.86                 | DC    | 45.35     |

### 13.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS     | TO BUS AREA | CKT ID | CONT NAME         | Type      | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|------------|-------------|--------|-------------------|-----------|------------|-----------------------|------------------------|-------|-----------|
| 8091213 | 313825    | 3PLYWOOD | DVP           | 314696  | 3SEGE HILL | DVP         | 1      | DVP_P1-2: LN 33-B | operation | 141.0      | 116.23                | 119.59                 | DC    | 11.4      |

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CK T ID | CONT NAME               | Type      | Rating MVA | PRE PROJECT LOADIN G % | POST PROJECT LOADIN G % | AC D C | MW IMPAC T |
|---------|-----------|--------------|---------------|---------|--------------|-------------|---------|-------------------------|-----------|------------|------------------------|-------------------------|--------|------------|
| 8090454 | 313845    | 6HATHAWAY    | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1       | DVP_P1-2: LN 2181       | operation | 374.0      | 179.4                  | 180.67                  | DC     | 10.5       |
| 8090697 | 313845    | 6HATHAWAY    | DVP           | 314591  | 6NASH        | DVP         | 1       | DVP_P1-2: LN 2058       | operation | 449.32     | 159.0                  | 160.08                  | DC     | 10.71      |
| 8090808 | 313867    | 6BREMIDIST   | DVP           | 314765  | 6MTEAGLE     | DVP         | 1       | Base Case               | operation | 661.76     | 98.34                  | 99.01                   | DC     | 9.83       |
| 8091419 | 314227    | 6LAKESIDE    | DVP           | 314218  | 6ELMONT      | DVP         | 1       | DVP_P1-2: LN 557        | operation | 740.72     | 99.06                  | 99.54                   | DC     | 7.94       |
| 8091069 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS     | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 559.3      | 128.87                 | 130.9                   | DC     | 25.13      |
| 8090925 | 314282    | 6CARSON      | DVP           | 314285  | 6CHRL249     | DVP         | 1       | DVP_P1-2: LN 563        | operation | 559.3      | 135.99                 | 138.42                  | DC     | 13.57      |
| 8091006 | 314285    | 6CHRL249     | DVP           | 314316  | 6LOCKS       | DVP         | 1       | DVP_P1-2: LN 563        | operation | 559.3      | 132.33                 | 134.76                  | DC     | 13.57      |
| 8090286 | 314287    | 6CHESTFB     | DVP           | 314276  | 6BASIN       | DVP         | 1       | DVP_P1-2: LN 563        | operation | 449.32     | 193.74                 | 194.65                  | DC     | 8.96       |
| 8091177 | 314299    | 6HARROWG     | DVP           | 314263  | 6TYLER1      | DVP         | 1       | DVP_P1-2: LN 563        | operation | 441.8      | 117.32                 | 118.34                  | DC     | 10.01      |
| 8091174 | 314331    | 6POE         | DVP           | 314299  | 6HARROWG     | DVP         | 1       | DVP_P1-2: LN 563        | operation | 441.8      | 117.34                 | 118.36                  | DC     | 10.01      |
| 8090674 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1       | DVP_P1-2: LN 2060       | operation | 678.68     | 156.91                 | 163.32                  | DC     | 43.54      |
| 8090679 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1       | Base Case               | operation | 678.68     | 144.59                 | 150.45                  | DC     | 39.75      |
| 8091343 | 314524    | 3FRNKLN      | DVP           | 314539  | 3UNCAMP      | DVP         | 1       | DVP_P1-2: LN 238-A      | operation | 224.66     | 106.45                 | 108.18                  | DC     | 8.6        |
| 8090530 | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1       | DVP_P1-3: 6CLUBHSE-TX#1 | operation | 239.89     | 162.66                 | 176.58                  | DC     | 33.4       |
| 8090535 | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1       | Base Case               | operation | 226.54     | 122.77                 | 124.78                  | DC     | 10.03      |
| 8091036 | 314561    | 6CAROLNA     | DVP           | 314599  | 6ROA VAL     | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 548.02     | 132.38                 | 134.45                  | DC     | 25.13      |
| 8090186 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1       | DVP_P1-2: LN 130-A      | operation | 182.64     | 185.41                 | 224.46                  | DC     | 71.32      |
| 8090191 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1       | Base Case               | operation | 176.81     | 142.05                 | 172.83                  | DC     | 54.42      |
| 8090514 | 314563    | 6CLUBHSE     | DVP           | 940480  | AE2-033 TAP  | DVP         | 1       | DVP_P1-2: LN 2056-A     | operation | 598.78     | 169.76                 | 177.04                  | DC     | 43.61      |
| 8090519 | 314563    | 6CLUBHSE     | DVP           | 940480  | AE2-033 TAP  | DVP         | 1       | Base Case               | operation | 598.78     | 155.31                 | 161.95                  | DC     | 39.76      |
| 8090733 | 314563    | 6CLUBHSE     | DVP           | 924510  | AB2-100 TAP  | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 375.06     | 144.48                 | 156.41                  | DC     | 44.74      |
| 8090411 | 314569    | 6EARLEYS     | DVP           | 314575  | 6NUCO TP     | DVP         | 1       | DVP_P1-2: LN 2092       | operation | 571.52     | 184.5                  | 185.42                  | DC     | 11.67      |
| 8090420 | 314569    | 6EARLEYS     | DVP           | 314575  | 6NUCO TP     | DVP         | 1       | Base Case               | operation | 571.52     | 114.88                 | 115.65                  | DC     | 9.67       |
| 8090464 | 314575    | 6NUCO TP     | DVP           | 919140  | AA1-138 TAP  | DVP         | 1       | DVP_P1-2: LN 2092       | operation | 571.52     | 178.12                 | 179.04                  | DC     | 11.67      |
| 8090473 | 314575    | 6NUCO TP     | DVP           | 919140  | AA1-138 TAP  | DVP         | 1       | Base Case               | operation | 571.52     | 108.48                 | 109.24                  | DC     | 9.67       |
| 8090707 | 314579    | 6HORNRTN     | DVP           | 934330  | AD1-057 TAP  | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 441.8      | 157.38                 | 159.9                   | DC     | 24.68      |
| 8090717 | 314579    | 6HORNRTN     | DVP           | 934330  | AD1-057 TAP  | DVP         | 1       | Base Case               | operation | 441.8      | 101.67                 | 102.93                  | DC     | 12.25      |
| 8091020 | 314583    | 6LAKEVEW     | DVP           | 314579  | 6HORNRTN     | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 441.8      | 130.44                 | 136.05                  | DC     | 24.8       |
| 8090858 | 314591    | 6NASH        | DVP           | 304226  | 6PA-RMOUNT#4 | CPL         | 1       | DVP_P1-2: LN 2058       | operation | 470.0      | 146.56                 | 147.59                  | DC     | 10.71      |
| 8091042 | 314599    | 6ROA VAL     | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 548.02     | 132.33                 | 134.4                   | DC     | 25.13      |
| 8091285 | 314600    | 3PLHITP      | DVP           | 314559  | 3CAROLNA     | DVP         | 1       | DVP_P1-3: 6CLUBHSE-TX#1 | operation | 315.84     | 94.26                  | 112.42                  | DC     | 57.33      |
| 8090822 | 314677    | 6BUCKING     | DVP           | 314747  | 6BREMO       | DVP         | 1       | DVP_P1-2: LN 556        | operation | 571.52     | 138.26                 | 139.58                  | DC     | 16.75      |

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CK T ID | CONT NAME                   | Type      | Rating MVA | PRE PROJECT LOADIN G % | POST PROJECT LOADIN G % | AC/D C | MW IMPAC T |
|---------|-----------|--------------|---------------|---------|--------------|-------------|---------|-----------------------------|-----------|------------|------------------------|-------------------------|--------|------------|
| 8090506 | 314691    | 3FARMVIL     | DVP           | 314692  | 6FARMVIL     | DVP         | 2       | DVP_P1-2: LN 235-A-A        | operation | 182.64     | 175.01                 | 178.67                  | DC     | 14.81      |
| 8090513 | 314691    | 3FARMVIL     | DVP           | 314692  | 6FARMVIL     | DVP         | 2       | Base Case                   | operation | 176.81     | 99.01                  | 101.35                  | DC     | 9.16       |
| 8090770 | 314691    | 3FARMVIL     | DVP           | 314692  | 6FARMVIL     | DVP         | 1       | DVP_P1-3: 6FARMVIL-TX#5     | operation | 198.06     | 149.88                 | 153.2                   | DC     | 14.61      |
| 8090839 | 314692    | 6FARMVIL     | DVP           | 314677  | 6BUCKING     | DVP         | 1       | DVP_P1-2: LN 556            | operation | 559.3      | 136.12                 | 137.46                  | DC     | 16.76      |
| 8091015 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 1       | DVP_P1-3: 6SEEDGE HILL-TX#2 | operation | 226.73     | 101.82                 | 104.71                  | DC     | 14.51      |
| 8091197 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2       | DVP_P1-3: 6SEEDGE HILL-TX#1 | operation | 256.06     | 89.87                  | 92.42                   | DC     | 14.47      |
| 8090783 | 314697    | 6SEEDGE HILL | DVP           | 927250  | AC1-221 TAP  | DVP         | 1       | DVP_P1-2: LN 556            | operation | 674.92     | 137.45                 | 138.41                  | DC     | 14.43      |
| 8090846 | 314702    | 3KERR        | DVP           | 304102  | 3GW KING TAP | CPL         | 1       | DVP_P1-2: LN 296-B          | operation | 199.0      | 145.36                 | 148.06                  | DC     | 11.87      |
| 8090851 | 314702    | 3KERR        | DVP           | 304102  | 3GW KING TAP | CPL         | 1       | Base Case                   | operation | 199.0      | 131.29                 | 133.81                  | DC     | 11.1       |
| 8091408 | 314707    | 3MORAN       | DVP           | 314691  | 3FARMVIL     | DVP         | 1       | DVP_P1-2: LN 84             | operation | 203.98     | 99.33                  | 101.91                  | DC     | 11.66      |
| 8090780 | 314747    | 6BREMO       | DVP           | 313867  | 6BREMODIST   | DVP         | 1       | Base Case                   | operation | 661.76     | 100.67                 | 101.34                  | DC     | 9.83       |
| 8090323 | 314914    | 8MDLTHAN     | DVP           | 314918  | 8NO ANNA     | DVP         | 1       | Base Case                   | operation | 2442.12    | 134.97                 | 135.25                  | DC     | 24.69      |
| 8090475 | 919140    | AA1-138 TAP  | DVP           | 314537  | 6SUFFOLK     | DVP         | 1       | DVP_P1-2: LN 2092           | operation | 571.52     | 178.1                  | 179.02                  | DC     | 11.67      |
| 8090484 | 919140    | AA1-138 TAP  | DVP           | 314537  | 6SUFFOLK     | DVP         | 1       | Base Case                   | operation | 571.52     | 108.48                 | 109.24                  | DC     | 9.67       |
| 8090545 | 924510    | AB2-100 TAP  | DVP           | 314583  | 6LAKEVEW     | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 375.06     | 164.12                 | 176.05                  | DC     | 44.74      |
| 8091402 | 927140    | AC1-208 TAP  | DVP           | 313858  | 3SO JUSTICE  | DVP         | 1       | DVP_P1-3: 6CAROLNA-TX#4     | operation | 165.44     | 100.48                 | 102.37                  | DC     | 6.9        |
| 8090605 | 934330    | AD1-057 TAP  | DVP           | 313845  | 6HATHAWAY    | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 441.8      | 168.13                 | 170.65                  | DC     | 24.68      |
| 8090615 | 934330    | AD1-057 TAP  | DVP           | 313845  | 6HATHAWAY    | DVP         | 1       | Base Case                   | operation | 441.8      | 111.34                 | 112.59                  | DC     | 12.25      |
| 8090357 | 940480    | AE2-033 TAP  | DVP           | 314435  | 6SAPONY      | DVP         | 1       | DVP_P1-2: LN 239            | operation | 598.78     | 180.38                 | 187.67                  | DC     | 43.64      |
| 8090362 | 940480    | AE2-033 TAP  | DVP           | 314435  | 6SAPONY      | DVP         | 1       | Base Case                   | operation | 598.78     | 166.38                 | 173.02                  | DC     | 39.76      |

## 13.5 System Reinforcements

| ID                                                      | Index | Facility                                          | Upgrade Description                                                                                                                                                                | Cost         |
|---------------------------------------------------------|-------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 8090417,8090416                                         | 27    | 6EARLEYS 230.0 kV -<br>6NUCO TP 230.0 kV Ckt 1    | dom-017 (76) : Rebuild 13.7 miles of 230 kV Line 246 from Earleys to Nucor Tap with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$20,550,000<br>Time Estimate : 30-36 Months       | \$20,550,000 |
| 7720531,7720530                                         | 19    | 6NORTHAMPTON 230.0 kV - 6EARLEYS 230.0 kV Ckt 1   | dom-105 (215) : Rebuild 34.83 miles of 230 kV Line 2012 from Northhampton to Earleys with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$87,075,000<br>Time Estimate : 48-60 Months | \$87,075,000 |
| 7720197,8090539,8090536                                 | 3     | 3CAROLNA 115.0 kV -<br>6CAROLNA 230.0 kV Ckt 1    | dom-020 (81) : Add additional 230/115 kV transformer at Carolina substation.<br>Project Type : CON<br>Cost : \$6,000,000<br>Time Estimate : 16-18 Months                           | \$18,000,000 |
| 8090469,8090470                                         | 28    | 6NUCO TP 230.0 kV -<br>AA1-138 TAP 230.0 kV Ckt 1 | dom-064 (154) : Rebuild 13.35 miles of 230 kV Line 246 from Nucor Tap to AA1-138 Tap with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$20,025,000<br>Time Estimate : 30-36 Months | \$20,025,000 |
| 8241944,8090363,7719986,8090368,8090364,8241943,7719987 | 42    | AE2-033 TAP 230.0 kV -<br>6SAPONY 230.0 kV Ckt 1  | dom-050 (132) : Rebuild 2.47 miles of 230 kV Line 238 from AE2-033 TAP to Sapony with 2-795 150C ACSR.<br>Project Type : FAC<br>Cost : \$3,705,000<br>Time Estimate : 30-36 Months | \$3,705,000  |
| 8242047,7720268,8242048,8090680,8090681,7720267         | 23    | 6SAPONY 230.0 kV -<br>6CARSON 230.0 kV Ckt 1      | dom-051 (134) : Rebuild 11.79 miles of 230 kV Line 238 from Sapony to Carson with 2-795 150C ACSR.<br>Project Type : FAC<br>Cost : \$17,685,000<br>Time Estimate : 30-36 Months    | \$17,685,000 |
| 8090926                                                 | 20    | 6CARSON 230.0 kV -<br>6CHRL249 230.0 kV Ckt 1     | dom-078 (174) : Rebuild 7.47 miles of 230 kV Line 249 from Carson to Chaparral with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$18,675,000<br>Time Estimate : 30-36 Months       | \$18,675,000 |
| 8091007                                                 | 21    | 6CHRL249 230.0 kV -<br>6LOCKS 230.0 kV Ckt 1      | dom-079 (175) : Rebuild 2.86 miles of 230 kV Line 249 from Chaparral to Locks with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$7,150,000<br>Time Estimate : 30-36 Months         | \$7,150,000  |

| ID                                                      | Index | Facility                                         | Upgrade Description                                                                                                                                                                                                                                                                                                                                                                                                 | Cost         |
|---------------------------------------------------------|-------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 7720548,7720549                                         | 24    | 6CAROLNA 230.0 kV -<br>6ROA VAL 230.0 kV Ckt 1   | dom-107 (219) : Rebuild 4.06 miles of 230 kV Line 2060 from Carolina to Roanoke Valley with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$10,150,000<br>Time Estimate : 30-36 Months                                                                                                                                                                                                                                | \$10,150,000 |
| 8242142,8242143                                         | 35    | 3WOODLND 115.0 kV -<br>3AULANDR 115.0 kV Ckt 1   | dom-127 (252) : Rebuild 7.95 miles of 115 kV Line 54 from Woodland to Aulander DP with 636 ACSR.<br>Project Type : FAC<br>Cost : \$10,335,000<br>Time Estimate : 30-36 Months                                                                                                                                                                                                                                       | \$10,335,000 |
| 8090503,8090501                                         | 9     | 3OTTER R 115.0 kV -<br>3ALTVSTA 115.0 kV Ckt 1   | No Reinforcement Needed. Not a valid violation <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                         | \$0          |
| 8090857,8090853,8090852,7720095,7720096,8241965,8241964 | 37    | 3KERR 115.0 kV - 3GW<br>KING TAP 115.0 kV Ckt 1  | DVP<br>dom-002 (53) : For DEV portion, rebuild 4.7 miles of 115 kV Line 45 from Kerr Dam to GW King Tap with 768 ACSS.<br>Project Type : FAC<br>Cost : \$6,123,000<br>Time Estimate : 30-36 Months<br><br>CPL<br>NonPJMArea : The external (i.e. Non-PJM) Transmission Owner, CPL, will not evaluate this violation until the impact study phase.<br>Project Type : FAC<br>Cost : \$0<br>Time Estimate : N/A Months | \$6,123,000  |
| 8090859                                                 | 31    | 6NASH 230.0 kV - 6PA-<br>RMOUNT#4 230.0 kV Ckt 1 | DVP<br>dom-005 (58) : For DEV portion, rebuild 3.3 miles of 230 kV Line 2181 from Nash to Parmount with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$8,250,000<br>Time Estimate : 30-36 Months<br><br>CPL<br>NonPJMArea : The external (i.e. Non-PJM) Transmission Owner, CPL, will not evaluate this violation until the impact study phase.<br>Project Type : FAC<br>Cost : \$0<br>Time Estimate : N/A Months    | \$8,250,000  |

<sup>1</sup> If “No Reinforcement Needed. Not a valid violation” was provided as the Upgrade Description for a facility in the System Reinforcements table then that facility met one of the following conditions:

- The loading on the facility at your queue position was less than 100%; therefore, the facility is not yet overloaded, but may be overloaded by end of the AE2 queue.
- The TO reviewed their ratings on the facility and determined that the current rating was greater than the rating in PJM’s model. This new rating was greater than the loading at your queue position making the violation invalid.
- The TO reviewed the contingency and determined that contingency was not valid; therefore the violation is invalid. Any contingency corrections will be assessed and corrected in the AE2 impact study phase.

| ID                                      | Index | Facility                                                 | Upgrade Description                                                                                                                                                                                                                                                                                                                                                                                                                                         | Cost         |
|-----------------------------------------|-------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 8090460,8090455                         | 16    | 6HATHAWAY 230.0 kV -<br>6ROCKYMT230T 230.0 kV<br>Ckt 1   | <p><u>DVP</u><br/>dom-003 (56) : For DEV portion, rebuild 4.13 miles of 230 kV Line 2058 from Hathaway to Rocky Mountain with 2-636 ACSR.<br/>Project Type : FAC<br/>Cost : \$10,325,000<br/>Time Estimate : 30-36 Months</p> <p><u>CPL</u><br/>NonPJM Area : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.<br/>Project Type : FAC<br/>Cost : \$0<br/>Time Estimate : N/A Months</p> | \$10,325,000 |
| 8242175,8242174                         | 34    | 3AULANDR 115.0 kV -<br>3EARLEYS 115.0 kV Ckt 1           | <p>dom-128 (253) : Rebuild 1.85 miles of 115 kV Line 54 from Aulander DP to Earleys with 636 ACSR.<br/>Project Type : FAC<br/>Cost : \$2,405,000<br/>Time Estimate : 30-36 Months</p>                                                                                                                                                                                                                                                                       | \$2,405,000  |
| 8090748                                 | 40    | AC1-221 TAP 230.0 kV -<br>6PERSON230 T 230.0 kV<br>Ckt 1 | <p><u>DVP</u><br/>No Reinforcement Needed. Not a valid violation</p> <p><u>CPL</u><br/>NonPJM Area : The external (i.e. Non-PJM) Transmission Owner, CPLE, will not evaluate this violation until the impact study phase.<br/>Project Type : FAC<br/>Cost : \$0<br/>Time Estimate : N/A Months</p>                                                                                                                                                          | \$0          |
| 8091025                                 | 5     | 6LAKEVEW 230.0 kV -<br>6HORNRTN 230.0 kV Ckt<br>1        | <p>dom-062 (151) : Rebuild 4.06 miles of 230 kV Line 239 from Lakeview to Hornertown with 2-636 ACSR.<br/>Project Type : FAC<br/>Cost : \$5,278,000<br/>Time Estimate : 30-36 Months</p>                                                                                                                                                                                                                                                                    | \$5,278,000  |
| 7720388,8090825,8090823,7720386,7720387 | 6     | 6BUCKING 230.0 kV -<br>6BREMO 230.0 kV Ckt 1             | <p>dom-034 (100) : Rebuild 15.51 miles of 230 kV Line 298 from Buckingham to Brema with 2-636 ACSR.<br/>Project Type : FAC<br/>Cost : \$23,265,000<br/>Time Estimate : 30-36 Months</p>                                                                                                                                                                                                                                                                     | \$23,265,000 |
| 8090842,8090840,7720403,7720402,7720401 | 8     | 6FARMVIL 230.0 kV -<br>6BUCKING 230.0 kV Ckt 1           | <p>dom-035 (102) : Rebuild 12.76 miles of 230 kV Line 298 from Buckingham to Farmville with 2-636 ACSR.<br/>Project Type : FAC<br/>Cost : \$19,140,000<br/>Time Estimate : 30-36 Months</p>                                                                                                                                                                                                                                                                 | \$19,140,000 |

| ID                      | Index | Facility                                              | Upgrade Description                                                                                                                                                               | Cost         |
|-------------------------|-------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 8090781,8090779         | 10    | 6BREMO 230.0 kV -<br>6BREMODIST 230.0 kV<br>Ckt 1     | dom-071 (165) : Rebuild 0.16 miles of Line 2028 from Bremo to Bremo Dist with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$500,000<br>Time Estimate : 30-36 Months               | \$500,000    |
| 8091179,7720320,7720319 | 1     | 6HARROWG 230.0 kV -<br>6TYLER1 230.0 kV Ckt 1         | dom-036 (104) : Rebuild 4.5 miles of 230 kV Line 2003 from Harrowgate to Tyler with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$11,250,000<br>Time Estimate : 30-36 Months      | \$11,250,000 |
| 7720318,7720317,8091176 | 2     | 6POE 230.0 kV -<br>6HARROWG 230.0 kV Ckt 1            | dom-037 (106) : Rebuild 12.3 miles of 230 kV Line 2003 from Poe to Harrowgate with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$30,750,000<br>Time Estimate : 30-36 Months       | \$30,750,000 |
| 8090480,8090481         | 39    | AA1-138 TAP 230.0 kV -<br>6SUFFOLK 230.0 kV Ckt 1     | dom-065 (156) : Rebuild 17.3 miles of 230 kV Line 246 from AA1-138 Tap to Suffolk with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$25,950,000<br>Time Estimate : 36-40 Months   | \$25,950,000 |
| 8090611,8090610         | 41    | AD1-057 TAP 230.0 kV -<br>6HATHAWAY 230.0 kV<br>Ckt 1 | dom-076 (172) : Rebuild 12.8 miles of 230 KV Line 2056 from AD1-057 Tap to Hathaway with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$19,200,000<br>Time Estimate : 30-36 Months | \$19,200,000 |
| 8090807                 | 18    | 6BREMODIST 230.0 kV -<br>6MTEAGLE 230.0 kV Ckt 1      | dom-072 (166) : Rebuild 18.94 miles of 230 kV Line 2028 from Bremo Dist to Mt Eagle with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$47,350,000<br>Time Estimate : 36-40 Months | \$47,350,000 |
| 8090547,7720139,7720140 | 11    | AB2-100 TAP 230.0 kV -<br>6LAKEVEW 230.0 kV Ckt 1     | dom-049 (129) : Rebuild 16.0 miles of 230 kV Line 254 from AB2-100 Tap to Lakeview with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$24,000,000<br>Time Estimate : 30-36 Months  | \$24,000,000 |
| 7720288,7720287         | 26    | 6CLUBHSE 230.0 kV -<br>AB2-100 TAP 230.0 kV Ckt 1     | dom-048 (127) : Rebuild 2.0 miles of 230 kV Line 254 from Clubhouse to AB2-100 Tap with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$3,000,000<br>Time Estimate : 30-36 Months   | \$3,000,000  |

| ID              | Index | Facility                                                  | Upgrade Description                                                                                                                                                                     | Cost         |
|-----------------|-------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 8090890         | 38    | 6MTEAGLE 230.0 kV -<br>6CHARLVL 230.0 kV Ckt 1            | dom-073 (168) : Rebuild 6.47 miles of 230 kV Line 2028 from Mt Eagle to Charlottesville with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$16,175,000<br>Time Estimate : 30-36 Months   | \$16,175,000 |
| 7720611         | 12    | 6CARSON 230.0 kV - 6POE<br>230.0 kV Ckt 1                 | dom-120 (239) : Rebuild 12.68 miles of 230 kV Line 2002 from Carson to Poe with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$31,700,000<br>Time Estimate : 30-36 Months                | \$31,700,000 |
| 8090511,8090512 | 7     | 3FARMVIL 115.0 kV -<br>6FARMVIL 230.0 kV Ckt 2            | dom-089 (190) : Add additional 230/115 kV transformer at Farmville substation<br>Project Type : CON<br>Cost : \$6,000,000<br>Time Estimate : 16-18 Months                               | \$12,000,000 |
| 8090712,8090713 | 29    | 6HORNRTN 230.0 kV -<br>AD1-057 TAP 230.0 kV<br>Ckt 1      | dom-077 (173) : Rebuild 16 miles of 230 kV Line 2056 from Hornertown to AD1-057 TAP with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$24,000,000<br>Time Estimate : 36-40 Months       | \$24,000,000 |
| 8090698         | 17    | 6HATHAWAY 230.0 kV -<br>6NASH 230.0 kV Ckt 1              | dom-143 (272) : Rebuild 0.76 miles of 230 kV Line 2181 from Hathaway to Nash with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$1,900,000<br>Time Estimate : 30-36 Months               | \$1,900,000  |
| 7720551,7720552 | 32    | 6ROA VAL 230.0 kV -<br>6NORTHAMPTON 230.0<br>kV Ckt 1     | dom-106 (217) : Rebuild 2.87 miles of 230 kV Line 2012 from Roanoke Valley to Northhampton with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$7,175,000<br>Time Estimate : 30-36 Months | \$7,175,000  |
| 7720432         | 13    | 3SEEDGE HILL 115.0 kV -<br>6SEEDGE HILL 230.0 kV Ckt<br>1 | No Reinforcement Needed. Not a valid violation <sup>1</sup>                                                                                                                             | \$0          |
| 8091216         | 15    | 3PLYWOOD 115.0 kV -<br>3SEEDGE HILL 115.0 kV Ckt<br>1     | dom-080 (177) : Rebuild 6.65 miles of 115 kV Line 151 from Plywood to Sedge Hill with 636 ACSR.<br>Project Type : FAC<br>Cost : \$8,645,000<br>Time Estimate : 30-36 Months             | \$8,645,000  |
| 7720473,7720474 | 14    | 3SEEDGE HILL 115.0 kV -<br>6SEEDGE HILL 230.0 kV Ckt<br>2 | No Reinforcement Needed. Not a valid violation <sup>1</sup>                                                                                                                             | \$0          |

| ID                                              | Index | Facility                                              | Upgrade Description                                                                                                                                                                     | Cost          |
|-------------------------------------------------|-------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 7719964,7719965,8090197,8090192,8090193         | 4     | 3CLUBHSE 115.0 kV -<br>6CLUBHSE 230.0 kV Ckt 1        | dom-010 (67) : Add additional 230/115 kV transformer at Clubhouse substation.<br>Project Type : CON<br>Cost : \$6,000,000<br>Time Estimate : 16-18 Months                               | \$30,000,000  |
| 8090787                                         | 36    | 6SEEDGE HILL 230.0 kV -<br>AC1-221 TAP 230.0 kV Ckt 1 | No Reinforcement Needed. Not a valid violation <sup>1</sup>                                                                                                                             | \$0           |
| 8090525,8090521,8090520,8241959,7720046,7720045 | 25    | 6CLUBHSE 230.0 kV - AE2-<br>033 TAP 230.0 kV Ckt 1    | dom-047 (124) : Rebuild 14.28 miles of 230 kV Line 238 from Clubhouse to AE2-033 Tap with 2-795 150C ACSR.<br>Project Type : FAC<br>Cost : \$21,420,000<br>Time Estimate : 30-36 Months | \$21,420,000  |
| 8090289,8090290                                 | 22    | 6CHESTF B 230.0 kV -<br>6BASIN 230.0 kV Ckt 1         | dom-012 (70) : Rebuild 12.4 miles of 230 kV Line 259 from Chesterfield to Basin with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$31,000,000<br>Time Estimate : 30-36 Months           | \$31,000,000  |
| 8090230,8090229                                 | 30    | 6LAKEVEW 230.0 kV -<br>6CAROLNA 230.0 kV Ckt 1        | dom-061 (149) : Rebuild 1.37 miles of 230 kV Line 2141 from Lakeview to Carolina with 2-636 ACSR.<br>Project Type : FAC<br>Cost : \$1,781,000<br>Time Estimate : 30-36 Months           | \$1,781,000   |
| 7720570                                         | 33    | 3PLHITP 115.0 kV -<br>3CAROLNA 115.0 kV Ckt 1         | dom-118 (235) : Replace Breaker Leads at Pleasant Hill and Carolina substations.<br>Project Type : FAC<br>Cost : \$500,000<br>Time Estimate : 30-36 Months                              | \$500,000     |
|                                                 |       |                                                       | TOTAL COST                                                                                                                                                                              | \$636,432,000 |

### 13.6 Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

---

### 13.6.1 Index 1

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS  | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|---------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720319 | 314299    | 6HARROWG | DVP           | 314263  | 6TYLER1 | DVP         | 1      | DVP_P4-2:<br>24972-4 | breaker | 541.0      | 128.63                | 133.01                 | DC    | 23.65     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314539 | 3UNCAMP      | 1.22      |
| 314541 | 3WATKINS     | 0.38      |
| 314554 | 3BTLEBRO     | 0.5       |
| 314557 | 3BETHELC     | 0.48      |
| 314572 | 3EMPORIA     | 0.58      |
| 314574 | 6EVERETS     | 2.18      |
| 314578 | 3HORNRTN     | 2.96      |
| 314582 | 3KELFORD     | 2.27      |
| 314603 | 3SCOT NK     | 2.25      |
| 314617 | 3TUNIS       | 0.53      |
| 314620 | 6CASHIE      | 0.4       |
| 314623 | 3WITAKRS     | 0.88      |
| 314704 | 3LAWRENC     | 0.29      |
| 315126 | 1ROARAP2     | 0.93      |
| 315131 | 1EDGECEMA    | 5.88      |
| 315132 | 1EDGECEMB    | 5.88      |
| 315136 | 1ROSEMG1     | 1.72      |
| 315137 | 1ROSEMS1     | 1.07      |
| 315138 | 1ROSEMG2     | 0.8       |
| 315139 | 1GASTONA     | 2.54      |
| 315141 | 1GASTONB     | 2.54      |
| 900672 | V4-068 E     | 0.19      |
| 907092 | X1-038 E     | 3.04      |
| 917332 | Z2-043 E     | 0.64      |
| 917342 | Z2-044 E     | 0.38      |
| 917512 | Z2-088 E OP1 | 2.17      |
| 918492 | AA1-063AE OP | 3.19      |
| 918512 | AA1-065 E OP | 2.44      |
| 918532 | AA1-067 E    | 0.39      |
| 918562 | AA1-072 E    | 0.11      |
| 919692 | AA2-053 E    | 3.2       |
| 919701 | AA2-057 C    | 4.86      |
| 919702 | AA2-057 E    | 2.43      |
| 920042 | AA2-088 E OP | 6.77      |
| 920592 | AA2-165 E    | 0.32      |
| 920672 | AA2-174 E    | 0.37      |
| 923801 | AB2-015 C O1 | 4.55      |
| 923802 | AB2-015 E O1 | 3.74      |
| 923851 | AB2-025 C    | 0.71      |
| 923852 | AB2-025 E    | 2.6       |
| 923911 | AB2-031 C O1 | 2.72      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 923912 | AB2-031 E O1 | 1.34      |
| 923991 | AB2-040 C O1 | 1.09      |
| 923992 | AB2-040 E O1 | 7.31      |
| 924022 | AB2-043 E O1 | 2.58      |
| 924152 | AB2-059 E O1 | 3.39      |
| 924162 | AB2-060 E O1 | 2.1       |
| 924302 | AB2-077 E O1 | 0.66      |
| 924312 | AB2-078 E O1 | 0.66      |
| 924322 | AB2-079 E O1 | 0.66      |
| 924401 | AB2-089 C    | 1.32      |
| 924402 | AB2-089 E    | 0.68      |
| 924491 | AB2-098 C    | 0.3       |
| 924492 | AB2-098 E    | 0.13      |
| 924501 | AB2-099 C    | 0.37      |
| 924502 | AB2-099 E    | 0.16      |
| 924511 | AB2-100 C    | 19.94     |
| 924512 | AB2-100 E    | 9.82      |
| 925061 | AB2-161 C O1 | 3.56      |
| 925062 | AB2-161 E O1 | 5.8       |
| 925171 | AB2-174 C O1 | 8.98      |
| 925172 | AB2-174 E O1 | 8.12      |
| 925591 | AC1-034 C    | 4.26      |
| 925592 | AC1-034 E    | 3.22      |
| 925781 | AC1-054 C O1 | 4.71      |
| 925782 | AC1-054 E O1 | 2.17      |
| 926071 | AC1-086 C    | 23.46     |
| 926072 | AC1-086 E    | 10.68     |
| 926201 | AC1-098 C    | 4.34      |
| 926202 | AC1-098 E    | 2.58      |
| 926211 | AC1-099 C    | 1.45      |
| 926212 | AC1-099 E    | 0.85      |
| 927021 | AC1-189 C    | 4.75      |
| 927022 | AC1-189 E    | 2.37      |
| 927141 | AC1-208 C    | 6.77      |
| 927142 | AC1-208 E    | 3.01      |
| 930402 | AB1-081 E O1 | 2.39      |
| 930861 | AB1-132 C O1 | 1.94      |
| 930862 | AB1-132 E O1 | 6.83      |
| 931231 | AB1-173 C    | 0.33      |
| 931232 | AB1-173 E    | 1.28      |
| 931241 | AB1-173AC    | 0.33      |
| 931242 | AB1-173AE    | 1.28      |
| 932581 | AC2-078 C O1 | 6.56      |
| 932582 | AC2-078 E O1 | 10.7      |
| 932591 | AC2-079 C O1 | 4.04      |
| 932592 | AC2-079 E O1 | 6.59      |
| 932631 | AC2-084 C    | 6.18      |
| 932632 | AC2-084 E    | 3.05      |
| 934201 | AD1-047 C    | 9.75      |
| 934202 | AD1-047 E    | 6.5       |
| 934231 | AD1-050 C    | 2.91      |
| 934232 | AD1-050 E    | 1.59      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 934331 | AD1-057 C O1 | 8.58      |
| 934332 | AD1-057 E O1 | 4.58      |
| 934571 | AD1-082 C    | 8.1       |
| 934572 | AD1-082 E    | 4.62      |
| 935211 | AD1-156 C    | 0.84      |
| 935212 | AD1-156 E    | 4.58      |
| 936361 | AD2-046 C O1 | 4.87      |
| 936362 | AD2-046 E O1 | 2.24      |
| 936401 | AD2-051 C O1 | 5.39      |
| 936402 | AD2-051 E O1 | 2.31      |
| 936661 | AD2-085 C    | 2.49      |
| 936662 | AD2-085 E    | 4.07      |
| 936701 | AD2-089 C    | 4.3       |
| 936702 | AD2-089 E    | 2.87      |
| 936711 | AD2-090 C O1 | 4.17      |
| 936712 | AD2-090 E O1 | 2.78      |
| 937571 | AD2-169 C    | 11.48     |
| 937572 | AD2-169 E    | 7.65      |
| 938171 | AE1-026 C1 O | 13.16     |
| 938172 | AE1-026 C2 O | 1.9       |
| 938173 | AE1-026 E O1 | 3.98      |
| 938221 | AE1-035 C    | 1.24      |
| 938222 | AE1-035 E    | 0.61      |
| 938631 | AE1-085 C O1 | 16.84     |
| 938632 | AE1-085 E O1 | 11.23     |
| 938771 | AE1-103 C O1 | 1.82      |
| 938772 | AE1-103 E O1 | 2.52      |
| 939071 | AE1-135 C O1 | 37.34     |
| 939072 | AE1-135 E O1 | 24.89     |
| 939181 | AE1-148 C O1 | 4.78      |
| 939182 | AE1-148 E O1 | 3.19      |
| 939191 | AE1-149 C O1 | 18.48     |
| 939192 | AE1-149 E O1 | 12.32     |
| 940061 | AE1-248 C O1 | 16.84     |
| 940062 | AE1-248 E O1 | 11.23     |
| 940481 | AE2-033 C    | 35.93     |
| 940482 | AE2-033 E    | 24.22     |
| 940521 | AE2-037 C O1 | 5.01      |
| 940522 | AE2-037 E O1 | 2.42      |
| 940541 | AE2-040      | 7.45      |
| 940571 | AE2-044 C    | 2.79      |
| 940572 | AE2-044 E    | 1.2       |
| 940651 | AE2-052      | 6.19      |
| 940661 | AE2-053      | 1.78      |
| 941541 | AE2-151 C    | 0.67      |
| 941542 | AE2-151 E    | 0.36      |
| 941601 | AE2-157 C O1 | 13.21     |
| 941602 | AE2-157 E O1 | 8.81      |
| 941951 | AE2-207      | 1.8       |
| 942341 | AE2-247 C    | 1.08      |
| 942342 | AE2-247 E    | 1.49      |
| 942451 | AE2-258      | 1.17      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 942471     | AE2-260 C O1 | 25.73     |
| 942472     | AE2-260 E O1 | 36.5      |
| 942711     | AE2-287 C O1 | 14.19     |
| 942712     | AE2-287 E O1 | 9.46      |
| 943171     | AE2-346 C    | 1.1       |
| 943172     | AE2-346 E    | 0.47      |
| AA2-074    | AA2-074      | 1.64      |
| CARR       | CARR         | 0.16      |
| CBM-S1     | CBM-S1       | 3.81      |
| CBM-S2     | CBM-S2       | 4.44      |
| CBM-W1     | CBM-W1       | 3.84      |
| CBM-W2     | CBM-W2       | 24.85     |
| CIN        | CIN          | 1.73      |
| CPL        | CPL          | 2.41      |
| G-007      | G-007        | 0.55      |
| IPL        | IPL          | 1.09      |
| LGEE       | LGEE         | 0.5       |
| MEC        | MEC          | 3.85      |
| MECS       | MECS         | 1.63      |
| O-066      | O-066        | 3.48      |
| RENSSELAER | RENSSELAER   | 0.13      |
| WEC        | WEC          | 0.46      |

### 13.6.2 Index 2

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720317 | 314331    | 6POE     | DVP           | 314299  | 6HARROWG | DVP         | 1      | DVP_P4-2:<br>24972-4 | breaker | 541.0      | 128.65                | 133.02                 | DC    | 23.65     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314539 | 3UNCAMP      | 1.22      |
| 314541 | 3WATKINS     | 0.38      |
| 314554 | 3BTLEBRO     | 0.5       |
| 314557 | 3BETHELC     | 0.48      |
| 314572 | 3EMPORIA     | 0.58      |
| 314574 | 6EVERETS     | 2.18      |
| 314578 | 3HORNRTN     | 2.96      |
| 314582 | 3KELFORD     | 2.27      |
| 314603 | 3SCOT NK     | 2.25      |
| 314617 | 3TUNIS       | 0.53      |
| 314620 | 6CASHIE      | 0.4       |
| 314623 | 3WITAKRS     | 0.88      |
| 314704 | 3LAWRENC     | 0.29      |
| 315126 | 1ROARAP2     | 0.93      |
| 315131 | 1EDGECEMA    | 5.88      |
| 315132 | 1EDGECEMB    | 5.88      |
| 315136 | 1ROSEMG1     | 1.72      |
| 315137 | 1ROSEMS1     | 1.07      |
| 315138 | 1ROSEMG2     | 0.8       |
| 315139 | 1GASTONA     | 2.54      |
| 315141 | 1GASTONB     | 2.54      |
| 900672 | V4-068 E     | 0.19      |
| 907092 | X1-038 E     | 3.04      |
| 917332 | Z2-043 E     | 0.64      |
| 917342 | Z2-044 E     | 0.38      |
| 917512 | Z2-088 E OP1 | 2.17      |
| 918492 | AA1-063AE OP | 3.19      |
| 918512 | AA1-065 E OP | 2.44      |
| 918532 | AA1-067 E    | 0.39      |
| 918562 | AA1-072 E    | 0.11      |
| 919692 | AA2-053 E    | 3.2       |
| 919701 | AA2-057 C    | 4.86      |
| 919702 | AA2-057 E    | 2.43      |
| 920042 | AA2-088 E OP | 6.77      |
| 920592 | AA2-165 E    | 0.32      |
| 920672 | AA2-174 E    | 0.37      |
| 923801 | AB2-015 C O1 | 4.55      |
| 923802 | AB2-015 E O1 | 3.74      |
| 923851 | AB2-025 C    | 0.71      |
| 923852 | AB2-025 E    | 2.6       |
| 923911 | AB2-031 C O1 | 2.72      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 923912 | AB2-031 E O1 | 1.34      |
| 923991 | AB2-040 C O1 | 1.09      |
| 923992 | AB2-040 E O1 | 7.31      |
| 924022 | AB2-043 E O1 | 2.58      |
| 924152 | AB2-059 E O1 | 3.39      |
| 924162 | AB2-060 E O1 | 2.1       |
| 924302 | AB2-077 E O1 | 0.66      |
| 924312 | AB2-078 E O1 | 0.66      |
| 924322 | AB2-079 E O1 | 0.66      |
| 924401 | AB2-089 C    | 1.32      |
| 924402 | AB2-089 E    | 0.68      |
| 924491 | AB2-098 C    | 0.3       |
| 924492 | AB2-098 E    | 0.13      |
| 924501 | AB2-099 C    | 0.37      |
| 924502 | AB2-099 E    | 0.16      |
| 924511 | AB2-100 C    | 19.94     |
| 924512 | AB2-100 E    | 9.82      |
| 925061 | AB2-161 C O1 | 3.56      |
| 925062 | AB2-161 E O1 | 5.8       |
| 925171 | AB2-174 C O1 | 8.98      |
| 925172 | AB2-174 E O1 | 8.12      |
| 925591 | AC1-034 C    | 4.26      |
| 925592 | AC1-034 E    | 3.22      |
| 925781 | AC1-054 C O1 | 4.71      |
| 925782 | AC1-054 E O1 | 2.17      |
| 926071 | AC1-086 C    | 23.46     |
| 926072 | AC1-086 E    | 10.68     |
| 926201 | AC1-098 C    | 4.34      |
| 926202 | AC1-098 E    | 2.58      |
| 926211 | AC1-099 C    | 1.45      |
| 926212 | AC1-099 E    | 0.85      |
| 927021 | AC1-189 C    | 4.75      |
| 927022 | AC1-189 E    | 2.37      |
| 927141 | AC1-208 C    | 6.77      |
| 927142 | AC1-208 E    | 3.01      |
| 930402 | AB1-081 E O1 | 2.39      |
| 930861 | AB1-132 C O1 | 1.94      |
| 930862 | AB1-132 E O1 | 6.83      |
| 931231 | AB1-173 C    | 0.33      |
| 931232 | AB1-173 E    | 1.28      |
| 931241 | AB1-173AC    | 0.33      |
| 931242 | AB1-173AE    | 1.28      |
| 932581 | AC2-078 C O1 | 6.56      |
| 932582 | AC2-078 E O1 | 10.7      |
| 932591 | AC2-079 C O1 | 4.04      |
| 932592 | AC2-079 E O1 | 6.59      |
| 932631 | AC2-084 C    | 6.18      |
| 932632 | AC2-084 E    | 3.05      |
| 934201 | AD1-047 C    | 9.75      |
| 934202 | AD1-047 E    | 6.5       |
| 934231 | AD1-050 C    | 2.91      |
| 934232 | AD1-050 E    | 1.59      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 934331 | AD1-057 C O1 | 8.58      |
| 934332 | AD1-057 E O1 | 4.58      |
| 934571 | AD1-082 C    | 8.1       |
| 934572 | AD1-082 E    | 4.62      |
| 935211 | AD1-156 C    | 0.84      |
| 935212 | AD1-156 E    | 4.58      |
| 936361 | AD2-046 C O1 | 4.87      |
| 936362 | AD2-046 E O1 | 2.24      |
| 936401 | AD2-051 C O1 | 5.39      |
| 936402 | AD2-051 E O1 | 2.31      |
| 936661 | AD2-085 C    | 2.49      |
| 936662 | AD2-085 E    | 4.07      |
| 936701 | AD2-089 C    | 4.3       |
| 936702 | AD2-089 E    | 2.87      |
| 936711 | AD2-090 C O1 | 4.17      |
| 936712 | AD2-090 E O1 | 2.78      |
| 937571 | AD2-169 C    | 11.48     |
| 937572 | AD2-169 E    | 7.65      |
| 938171 | AE1-026 C1 O | 13.16     |
| 938172 | AE1-026 C2 O | 1.9       |
| 938173 | AE1-026 E O1 | 3.98      |
| 938221 | AE1-035 C    | 1.24      |
| 938222 | AE1-035 E    | 0.61      |
| 938631 | AE1-085 C O1 | 16.84     |
| 938632 | AE1-085 E O1 | 11.23     |
| 938771 | AE1-103 C O1 | 1.82      |
| 938772 | AE1-103 E O1 | 2.52      |
| 939071 | AE1-135 C O1 | 37.34     |
| 939072 | AE1-135 E O1 | 24.89     |
| 939181 | AE1-148 C O1 | 4.78      |
| 939182 | AE1-148 E O1 | 3.19      |
| 939191 | AE1-149 C O1 | 18.48     |
| 939192 | AE1-149 E O1 | 12.32     |
| 940061 | AE1-248 C O1 | 16.84     |
| 940062 | AE1-248 E O1 | 11.23     |
| 940481 | AE2-033 C    | 35.93     |
| 940482 | AE2-033 E    | 24.22     |
| 940521 | AE2-037 C O1 | 5.01      |
| 940522 | AE2-037 E O1 | 2.42      |
| 940541 | AE2-040      | 7.45      |
| 940571 | AE2-044 C    | 2.79      |
| 940572 | AE2-044 E    | 1.2       |
| 940651 | AE2-052      | 6.19      |
| 940661 | AE2-053      | 1.78      |
| 941541 | AE2-151 C    | 0.67      |
| 941542 | AE2-151 E    | 0.36      |
| 941601 | AE2-157 C O1 | 13.21     |
| 941602 | AE2-157 E O1 | 8.81      |
| 941951 | AE2-207      | 1.8       |
| 942341 | AE2-247 C    | 1.08      |
| 942342 | AE2-247 E    | 1.49      |
| 942451 | AE2-258      | 1.17      |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>942471</b>     | AE2-260 C O1 | 25.73            |
| <b>942472</b>     | AE2-260 E O1 | 36.5             |
| <b>942711</b>     | AE2-287 C O1 | 14.19            |
| <b>942712</b>     | AE2-287 E O1 | 9.46             |
| <b>943171</b>     | AE2-346 C    | 1.1              |
| <b>943172</b>     | AE2-346 E    | 0.47             |
| <b>AA2-074</b>    | AA2-074      | 1.64             |
| <b>CARR</b>       | CARR         | 0.16             |
| <b>CBM-S1</b>     | CBM-S1       | 3.81             |
| <b>CBM-S2</b>     | CBM-S2       | 4.44             |
| <b>CBM-W1</b>     | CBM-W1       | 3.84             |
| <b>CBM-W2</b>     | CBM-W2       | 24.85            |
| <b>CIN</b>        | CIN          | 1.73             |
| <b>CPL</b>        | CPL          | 2.41             |
| <b>G-007</b>      | G-007        | 0.55             |
| <b>IPL</b>        | IPL          | 1.09             |
| <b>LGEE</b>       | LGEE         | 0.5              |
| <b>MEC</b>        | MEC          | 3.85             |
| <b>MECS</b>       | MECS         | 1.63             |
| <b>O-066</b>      | O-066        | 3.48             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.13             |
| <b>WEC</b>        | WEC          | 0.46             |

### 13.6.3 Index 3

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME           | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|---------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720197 | 314559    | 3CAROLNA | DVP           | 314561  | 6CAROLNA | DVP         | 1      | DVP_P4-2:<br>102952 | breaker | 288.6      | 146.51                | 148.66                 | DC    | 13.68     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314539 | 3UNCAMP      | 1.77      |
| 314541 | 3WATKINS     | 0.62      |
| 314578 | 3HORNRTN     | 8.18      |
| 314582 | 3KELFORD     | 2.17      |
| 314589 | 3MURPHYS     | 0.07      |
| 314603 | 3SCOT NK     | 2.68      |
| 314617 | 3TUNIS       | 0.64      |
| 315126 | 1ROARAP2     | 2.72      |
| 315128 | 1ROARAP4     | 2.61      |
| 315150 | 1BUGGS 1     | 7.88      |
| 315151 | 1BUGGS 2     | 7.88      |
| 315159 | 1KERR 2      | 1.08      |
| 315162 | 1KERR 5      | 1.07      |
| 315163 | 1KERR 6      | 1.07      |
| 315164 | 1KERR 7      | 1.07      |
| 900672 | V4-068 E     | 0.31      |
| 907092 | X1-038 E     | 4.43      |
| 917332 | Z2-043 E     | 0.62      |
| 918491 | AA1-063AC OP | 1.84      |
| 918492 | AA1-063AE OP | 7.14      |
| 918562 | AA1-072 E    | 0.1       |
| 919691 | AA2-053 C    | 2.33      |
| 919692 | AA2-053 E    | 8.21      |
| 919701 | AA2-057 C    | 4.74      |
| 919702 | AA2-057 E    | 2.37      |
| 920041 | AA2-088 C OP | 0.99      |
| 920042 | AA2-088 E OP | 13.29     |
| 920592 | AA2-165 E    | 0.31      |
| 920671 | AA2-174 C    | 0.11      |
| 920672 | AA2-174 E    | 0.95      |
| 923801 | AB2-015 C O1 | 7.16      |
| 923802 | AB2-015 E O1 | 5.87      |
| 923911 | AB2-031 C O1 | 6.01      |
| 923912 | AB2-031 E O1 | 2.96      |
| 923991 | AB2-040 C O1 | 2.41      |
| 923992 | AB2-040 E O1 | 16.16     |
| 924022 | AB2-043 E O1 | 3.26      |
| 924162 | AB2-060 E O1 | 2.66      |
| 924302 | AB2-077 E O1 | 0.85      |
| 924312 | AB2-078 E O1 | 0.85      |
| 924322 | AB2-079 E O1 | 0.85      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 924401 | AB2-089 C    | 2.81      |
| 924402 | AB2-089 E    | 1.45      |
| 924501 | AB2-099 C    | 0.34      |
| 924502 | AB2-099 E    | 0.15      |
| 925171 | AB2-174 C O1 | 18.85     |
| 925172 | AB2-174 E O1 | 17.06     |
| 925612 | AC1-036 E    | 0.43      |
| 925781 | AC1-054 C O1 | 10.61     |
| 925782 | AC1-054 E O1 | 4.89      |
| 926201 | AC1-098 C    | 5.78      |
| 926202 | AC1-098 E    | 3.44      |
| 926211 | AC1-099 C    | 1.94      |
| 926212 | AC1-099 E    | 1.14      |
| 927141 | AC1-208 C    | 11.25     |
| 927142 | AC1-208 E    | 5.0       |
| 931231 | AB1-173 C    | 0.74      |
| 931232 | AB1-173 E    | 2.83      |
| 931241 | AB1-173AC    | 0.74      |
| 931242 | AB1-173AE    | 2.83      |
| 932631 | AC2-084 C    | 8.24      |
| 932632 | AC2-084 E    | 4.06      |
| 934201 | AD1-047 C    | 21.54     |
| 934202 | AD1-047 E    | 14.36     |
| 934231 | AD1-050 C    | 6.19      |
| 934232 | AD1-050 E    | 3.38      |
| 936261 | AD2-033 C    | 6.8       |
| 936262 | AD2-033 E    | 4.53      |
| 936361 | AD2-046 C O1 | 8.68      |
| 936362 | AD2-046 E O1 | 3.99      |
| 936481 | AD2-063 C O1 | 8.7       |
| 936482 | AD2-063 E O1 | 5.8       |
| 936711 | AD2-090 C O1 | 7.38      |
| 936712 | AD2-090 E O1 | 4.92      |
| 937571 | AD2-169 C    | 26.93     |
| 937572 | AD2-169 E    | 17.95     |
| 938771 | AE1-103 C O1 | 2.66      |
| 938772 | AE1-103 E O1 | 3.67      |
| 939181 | AE1-148 C O1 | 8.39      |
| 939182 | AE1-148 E O1 | 5.59      |
| 940241 | AE2-006      | 0.24      |
| 940521 | AE2-037 C O1 | 3.88      |
| 940522 | AE2-037 E O1 | 1.87      |
| 940661 | AE2-053      | 3.12      |
| 942451 | AE2-258      | 1.48      |
| 942711 | AE2-287 C O1 | 8.21      |
| 942712 | AE2-287 E O1 | 5.47      |
| 943171 | AE2-346 C    | 1.03      |
| 943172 | AE2-346 E    | 0.44      |
| CARR   | CARR         | 0.04      |
| CBM-S1 | CBM-S1       | 0.34      |
| CBM-S2 | CBM-S2       | 0.31      |
| CBM-W1 | CBM-W1       | 0.34      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-W2</b>     | CBM-W2     | 2.17             |
| <b>CIN</b>        | CIN        | 0.16             |
| <b>CPLE</b>       | CPLE       | 0.12             |
| <b>G-007</b>      | G-007      | 0.14             |
| <b>IPL</b>        | IPL        | 0.1              |
| <b>LGEE</b>       | LGEE       | 0.05             |
| <b>MEC</b>        | MEC        | 0.34             |
| <b>MECS</b>       | MECS       | 0.13             |
| <b>O-066</b>      | O-066      | 0.9              |
| <b>RENSSELAER</b> | RENSSELAER | 0.03             |
| <b>WEC</b>        | WEC        | 0.04             |

#### 13.6.4 Index 4

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME              | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7719964 | 314562    | 3CLUBHSE | DVP           | 314563  | 6CLUBHSE | DVP         | 1      | DVP_P4-6: CAROLIN T122 | breaker | 208.6      | 201.55                | 236.24                 | DC    | 72.36     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.98      |
| 314704 | 3LAWRENC     | 0.89      |
| 315150 | 1BUGGS 1     | 8.31      |
| 315151 | 1BUGGS 2     | 8.31      |
| 315158 | 1KERR 1      | 0.19      |
| 315159 | 1KERR 2      | 0.79      |
| 315160 | 1KERR 3      | 0.78      |
| 315161 | 1KERR 4      | 0.78      |
| 315162 | 1KERR 5      | 0.78      |
| 315163 | 1KERR 6      | 0.78      |
| 315164 | 1KERR 7      | 0.78      |
| 923911 | AB2-031 C O1 | 10.64     |
| 923912 | AB2-031 E O1 | 5.24      |
| 923991 | AB2-040 C O1 | 4.26      |
| 923992 | AB2-040 E O1 | 28.58     |
| 924021 | AB2-043 C O1 | 0.38      |
| 924022 | AB2-043 E O1 | 5.17      |
| 924161 | AB2-060 C O1 | 1.09      |
| 924162 | AB2-060 E O1 | 4.21      |
| 924301 | AB2-077 C O1 | 0.24      |
| 924302 | AB2-077 E O1 | 1.29      |
| 924311 | AB2-078 C O1 | 0.24      |
| 924312 | AB2-078 E O1 | 1.29      |
| 924321 | AB2-079 C O1 | 0.24      |
| 924322 | AB2-079 E O1 | 1.29      |
| 924401 | AB2-089 C    | 1.61      |
| 924402 | AB2-089 E    | 0.83      |
| 925171 | AB2-174 C O1 | 33.34     |
| 925172 | AB2-174 E O1 | 30.17     |
| 925611 | AC1-036 C    | 0.09      |
| 925612 | AC1-036 E    | 0.68      |
| 925781 | AC1-054 C O1 | 5.43      |
| 925782 | AC1-054 E O1 | 2.5       |
| 931231 | AB1-173 C    | 1.31      |
| 931232 | AB1-173 E    | 5.0       |
| 931241 | AB1-173AC    | 1.31      |
| 931242 | AB1-173AE    | 5.0       |
| 934201 | AD1-047 C    | 38.11     |
| 934202 | AD1-047 E    | 25.4      |
| 934231 | AD1-050 C    | 3.55      |
| 934232 | AD1-050 E    | 1.94      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 936261     | AD2-033 C    | 10.76     |
| 936262     | AD2-033 E    | 7.18      |
| 936361     | AD2-046 C O1 | 7.05      |
| 936362     | AD2-046 E O1 | 3.24      |
| 936481     | AD2-063 C O1 | 13.78     |
| 936482     | AD2-063 E O1 | 9.19      |
| 937571     | AD2-169 C    | 47.63     |
| 937572     | AD2-169 E    | 31.75     |
| 939181     | AE1-148 C O1 | 7.07      |
| 939182     | AE1-148 E O1 | 4.71      |
| 939371     | AE1-168 C    | 10.05     |
| 939372     | AE1-168 E    | 6.7       |
| 940241     | AE2-006      | 0.38      |
| 940661     | AE2-053      | 2.63      |
| 942451     | AE2-258      | 2.35      |
| 942711     | AE2-287 C O1 | 43.41     |
| 942712     | AE2-287 E O1 | 28.94     |
| CARR       | CARR         | 0.04      |
| CBM-S1     | CBM-S1       | 0.53      |
| CBM-S2     | CBM-S2       | 0.43      |
| CBM-W1     | CBM-W1       | 0.63      |
| CBM-W2     | CBM-W2       | 3.49      |
| CIN        | CIN          | 0.29      |
| CPL        | CPL          | 0.17      |
| G-007      | G-007        | 0.13      |
| IPL        | IPL          | 0.18      |
| LGEE       | LGEE         | 0.09      |
| MEC        | MEC          | 0.59      |
| MECS       | MECS         | 0.29      |
| O-066      | O-066        | 0.85      |
| RENSSELAER | RENSSELAER   | 0.03      |
| WEC        | WEC          | 0.08      |

### 13.6.5 Index 5

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091025 | 314583    | 6LAKEVEW | DVP           | 314579  | 6HORNRTN | DVP         | 1      | DVP_P1-2: LN 238-B | single | 441.8      | 98.44                 | 101.81                 | DC    | 14.88     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.3       |
| 315115 | 1S HAMPT1    | 0.6       |
| 315126 | 1ROARAP2     | 1.2       |
| 315128 | 1ROARAP4     | 1.16      |
| 315139 | 1GASTONA     | 4.79      |
| 315141 | 1GASTONB     | 4.79      |
| 315150 | 1BUGGS 1     | 4.58      |
| 315151 | 1BUGGS 2     | 4.58      |
| 315158 | 1KERR 1      | 0.14      |
| 315159 | 1KERR 2      | 0.55      |
| 315160 | 1KERR 3      | 0.55      |
| 315161 | 1KERR 4      | 0.55      |
| 315162 | 1KERR 5      | 0.55      |
| 315163 | 1KERR 6      | 0.55      |
| 315164 | 1KERR 7      | 0.55      |
| 917331 | Z2-043 C     | 0.12      |
| 918491 | AA1-063AC OP | 0.96      |
| 918511 | AA1-065 C OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 1.12      |
| 920041 | AA2-088 C OP | 0.54      |
| 920671 | AA2-174 C    | 0.05      |
| 923801 | AB2-015 C O1 | 4.3       |
| 923911 | AB2-031 C O1 | 3.12      |
| 923991 | AB2-040 C O1 | 1.25      |
| 924021 | AB2-043 C O1 | 0.18      |
| 924161 | AB2-060 C O1 | 0.51      |
| 924301 | AB2-077 C O1 | 0.11      |
| 924311 | AB2-078 C O1 | 0.11      |
| 924321 | AB2-079 C O1 | 0.11      |
| 924401 | AB2-089 C    | 1.37      |
| 924501 | AB2-099 C    | 0.34      |
| 924511 | AB2-100 C    | 21.83     |
| 925171 | AB2-174 C O1 | 10.09     |
| 925611 | AC1-036 C    | 0.04      |
| 925781 | AC1-054 C O1 | 5.08      |
| 926071 | AC1-086 C    | 44.21     |
| 930861 | AB1-132 C O1 | 3.66      |
| 931231 | AB1-173 C    | 0.38      |
| 931241 | AB1-173AC    | 0.38      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 933991     | AD1-023 C    | 4.56      |
| 934201     | AD1-047 C    | 11.18     |
| 934231     | AD1-050 C    | 3.02      |
| 934521     | AD1-076 C    | 16.4      |
| 936261     | AD2-033 C    | 5.07      |
| 936361     | AD2-046 C O1 | 4.64      |
| 936401     | AD2-051 C O1 | 4.76      |
| 936481     | AD2-063 C O1 | 6.46      |
| 936711     | AD2-090 C O1 | 4.2       |
| 937571     | AD2-169 C    | 13.49     |
| 938171     | AE1-026 C1 O | 10.44     |
| 938172     | AE1-026 C2 O | 1.51      |
| 938221     | AE1-035 C    | 1.07      |
| 938771     | AE1-103 C O1 | 1.65      |
| 939071     | AE1-135 C O1 | 38.62     |
| 939181     | AE1-148 C O1 | 4.55      |
| 939371     | AE1-168 C    | 4.77      |
| 940241     | AE2-006      | 0.18      |
| 940481     | AE2-033 C    | 28.65     |
| 940521     | AE2-037 C O1 | 4.12      |
| 940661     | AE2-053      | 1.69      |
| 941541     | AE2-151 C    | 0.59      |
| 942451     | AE2-258      | 1.1       |
| 942471     | AE2-260 C O1 | 26.62     |
| 942711     | AE2-287 C O1 | 14.88     |
| 943171     | AE2-346 C    | 1.01      |
| BLUEG      | BLUEG        | 2.99      |
| CALDERWOOD | CALDERWOOD   | 0.63      |
| CANNELTON  | CANNELTON    | 0.2       |
| CATAWBA    | CATAWBA      | 0.62      |
| CBM-N      | CBM-N        | 0.06      |
| CHEOAH     | CHEOAH       | 0.59      |
| CHILHOWEE  | CHILHOWEE    | 0.2       |
| COFFEEN    | COFFEEN      | 0.35      |
| COTTONWOOD | COTTONWOOD   | 2.11      |
| DUCKCREEK  | DUCKCREEK    | 0.72      |
| EDWARDS    | EDWARDS      | 0.32      |
| ELMERSMITH | ELMERSMITH   | 0.36      |
| FARMERCITY | FARMERCITY   | 0.26      |
| G-007A     | G-007A       | 0.32      |
| GIBSON     | GIBSON       | 0.13      |
| HAMLET     | HAMLET       | 1.28      |
| NEWTON     | NEWTON       | 0.91      |
| NYISO      | NYISO        | 0.27      |
| PRAIRIE    | PRAIRIE      | 1.92      |
| SANTEETLA  | SANTEETLA    | 0.18      |
| SMITHLAND  | SMITHLAND    | 0.17      |
| TATANKA    | TATANKA      | 0.43      |
| TILTON     | TILTON       | 0.38      |
| TRIMBLE    | TRIMBLE      | 0.33      |
| TVA        | TVA          | 1.77      |
| UNIONPOWER | UNIONPOWER   | 0.88      |

| Bus # | Bus | MW Impact |
|-------|-----|-----------|
| VFT   | VFT | 0.85      |

### 13.6.6 Index 6

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720388 | 314677    | 6BUCKING | DVP           | 314747  | 6BREMO | DVP         | 1      | DVP_P4-2:<br>511T591 | breaker | 699.0      | 115.12                | 116.19                 | DC    | 16.76     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.69      |
| 315150 | 1BUGGS 1     | 13.27     |
| 315151 | 1BUGGS 2     | 13.27     |
| 315153 | 1CLOVER1     | 15.93     |
| 315154 | 1CLOVER2     | 15.72     |
| 315159 | 1KERR 2      | 1.04      |
| 315266 | 1PLYWOOD A   | 1.07      |
| 924021 | AB2-043 C O1 | 0.53      |
| 924022 | AB2-043 E O1 | 7.09      |
| 924031 | AB2-045 C    | 1.15      |
| 924032 | AB2-045 E    | 4.39      |
| 924161 | AB2-060 C O1 | 1.55      |
| 924162 | AB2-060 E O1 | 6.0       |
| 924301 | AB2-077 C O1 | 0.33      |
| 924302 | AB2-077 E O1 | 1.8       |
| 924311 | AB2-078 C O1 | 0.33      |
| 924312 | AB2-078 E O1 | 1.8       |
| 924321 | AB2-079 C O1 | 0.33      |
| 924322 | AB2-079 E O1 | 1.8       |
| 924401 | AB2-089 C    | 1.92      |
| 924402 | AB2-089 E    | 0.99      |
| 925611 | AC1-036 C    | 0.22      |
| 925612 | AC1-036 E    | 1.66      |
| 925781 | AC1-054 C O1 | 6.07      |
| 925782 | AC1-054 E O1 | 2.8       |
| 925831 | AC1-062      | 0.09      |
| 925991 | AC1-075 C    | 4.97      |
| 925992 | AC1-075 E    | 2.82      |
| 926021 | AC1-080 C    | 1.66      |
| 926022 | AC1-080 E    | 0.93      |
| 926271 | AC1-105 C O1 | 6.78      |
| 926272 | AC1-105 E O1 | 3.38      |
| 927251 | AC1-221 C    | 1.67      |
| 927252 | AC1-221 E    | 1.67      |
| 927261 | AC1-222 C    | 4.08      |
| 927262 | AC1-222 E    | 3.88      |
| 932511 | AC2-071 C    | 1.13      |
| 932512 | AC2-071 E    | 4.67      |
| 932761 | AC2-100 C    | 3.84      |
| 932762 | AC2-100 E    | 1.88      |
| 934231 | AD1-050 C    | 4.23      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 934232  | AD1-050 E    | 2.31      |
| 934311  | AD1-055 C    | 2.83      |
| 934312  | AD1-055 E    | 0.73      |
| 934341  | AD1-058 C    | 4.18      |
| 934342  | AD1-058 E    | 1.06      |
| 934611  | AD1-087 C O1 | 12.07     |
| 934612  | AD1-087 E O1 | 5.67      |
| 934621  | AD1-088 C    | 29.91     |
| 934622  | AD1-088 E    | 14.04     |
| 934991  | AD1-131 C    | 1.37      |
| 934992  | AD1-131 E    | 0.91      |
| 935171  | AD1-152 C O1 | 12.0      |
| 935172  | AD1-152 E O1 | 8.0       |
| 935221  | AD1-157 C    | 0.47      |
| 935222  | AD1-157 E    | 2.59      |
| 935231  | AD1-160 C    | 2.85      |
| 935232  | AD1-160 E    | 3.93      |
| 936261  | AD2-033 C    | 23.77     |
| 936262  | AD2-033 E    | 15.84     |
| 936331  | AD2-043 C    | 5.29      |
| 936332  | AD2-043 E    | 6.26      |
| 936361  | AD2-046 C O1 | 9.36      |
| 936362  | AD2-046 E O1 | 4.31      |
| 936481  | AD2-063 C O1 | 23.83     |
| 936482  | AD2-063 E O1 | 15.89     |
| 937481  | AD2-202 C O1 | 3.32      |
| 937482  | AD2-202 E O1 | 1.67      |
| 938371  | AE1-056 C    | 16.75     |
| 938372  | AE1-056 E    | 9.15      |
| 939181  | AE1-148 C O1 | 9.41      |
| 939182  | AE1-148 E O1 | 6.27      |
| 939371  | AE1-168 C    | 33.76     |
| 939372  | AE1-168 E    | 22.5      |
| 940241  | AE2-006      | 0.94      |
| 940661  | AE2-053      | 3.5       |
| 941791  | AE2-182 C    | 5.41      |
| 941792  | AE2-182 E    | 2.55      |
| 942451  | AE2-258      | 3.22      |
| 942461  | AE2-259 C O1 | 30.47     |
| 942462  | AE2-259 E O1 | 20.32     |
| 942711  | AE2-287 C O1 | 10.05     |
| 942712  | AE2-287 E O1 | 6.7       |
| 942751  | AE2-291 C O1 | 6.67      |
| 942752  | AE2-291 E O1 | 4.45      |
| 942761  | AE2-292 C O1 | 8.31      |
| 942762  | AE2-292 E O1 | 5.54      |
| 943051  | AE2-328 C    | 34.03     |
| 943052  | AE2-328 E    | 15.94     |
| AA2-074 | AA2-074      | 2.39      |
| CARR    | CARR         | 0.25      |
| CBM-S1  | CBM-S1       | 5.4       |
| CBM-S2  | CBM-S2       | 6.67      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-W1</b>     | CBM-W1     | 5.02             |
| <b>CBM-W2</b>     | CBM-W2     | 34.78            |
| <b>CIN</b>        | CIN        | 2.29             |
| <b>CPL</b>        | CPL        | 3.51             |
| <b>G-007</b>      | G-007      | 0.84             |
| <b>IPL</b>        | IPL        | 1.43             |
| <b>LGEE</b>       | LGEE       | 0.66             |
| <b>MEC</b>        | MEC        | 5.23             |
| <b>MECS</b>       | MECS       | 1.96             |
| <b>O-066</b>      | O-066      | 5.34             |
| <b>RENSSELAER</b> | RENSSELAER | 0.2              |
| <b>WEC</b>        | WEC        | 0.61             |

### 13.6.7 Index 7

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090511 | 314691    | 3FARMVIL | DVP           | 314692  | 6FARMVIL | DVP         | 2      | DVP_P1-2: LN 235-A-A | single | 182.64     | 110.93                | 115.79                 | DC    | 8.88      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.8       |
| 314704 | 3LAWRENC     | 0.15      |
| 315150 | 1BUGGS 1     | 9.74      |
| 315151 | 1BUGGS 2     | 9.74      |
| 315158 | 1KERR 1      | 0.2       |
| 315159 | 1KERR 2      | 0.83      |
| 315160 | 1KERR 3      | 0.82      |
| 315161 | 1KERR 4      | 0.82      |
| 315162 | 1KERR 5      | 0.82      |
| 315163 | 1KERR 6      | 0.82      |
| 315164 | 1KERR 7      | 0.82      |
| 315266 | 1PLYWOOD A   | 0.45      |
| 923911 | AB2-031 C O1 | 0.73      |
| 923991 | AB2-040 C O1 | 0.29      |
| 924021 | AB2-043 C O1 | 0.47      |
| 924161 | AB2-060 C O1 | 1.42      |
| 924301 | AB2-077 C O1 | 0.29      |
| 924311 | AB2-078 C O1 | 0.29      |
| 924321 | AB2-079 C O1 | 0.29      |
| 924401 | AB2-089 C    | 1.53      |
| 925171 | AB2-174 C O1 | 2.32      |
| 925611 | AC1-036 C    | 0.24      |
| 925781 | AC1-054 C O1 | 4.85      |
| 925831 | AC1-062      | 0.11      |
| 926271 | AC1-105 C O1 | 3.12      |
| 927261 | AC1-222 C    | 1.31      |
| 931231 | AB1-173 C    | 0.09      |
| 931241 | AB1-173AC    | 0.09      |
| 934201 | AD1-047 C    | 2.6       |
| 934231 | AD1-050 C    | 3.38      |
| 934311 | AD1-055 C    | 0.91      |
| 935221 | AD1-157 C    | 0.55      |
| 935231 | AD1-160 C    | 3.31      |
| 936261 | AD2-033 C    | 24.72     |
| 936331 | AD2-043 C    | 1.7       |
| 936361 | AD2-046 C O1 | 7.7       |
| 936481 | AD2-063 C O1 | 23.29     |
| 937571 | AD2-169 C    | 3.18      |
| 938371 | AE1-056 C    | 19.49     |
| 939181 | AE1-148 C O1 | 7.79      |
| 939371 | AE1-168 C    | 37.77     |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>940241</b>     | AE2-006      | 1.0              |
| <b>940661</b>     | AE2-053      | 2.9              |
| <b>942451</b>     | AE2-258      | 2.9              |
| <b>942461</b>     | AE2-259 C O1 | 36.82            |
| <b>942711</b>     | AE2-287 C O1 | 8.88             |
| <b>CARR</b>       | CARR         | 0.08             |
| <b>CBM-S1</b>     | CBM-S1       | 1.63             |
| <b>CBM-S2</b>     | CBM-S2       | 2.21             |
| <b>CBM-W1</b>     | CBM-W1       | 1.33             |
| <b>CBM-W2</b>     | CBM-W2       | 10.3             |
| <b>CIN</b>        | CIN          | 0.61             |
| <b>CPLE</b>       | CPLE         | 1.19             |
| <b>IPL</b>        | IPL          | 0.38             |
| <b>LGEE</b>       | LGEE         | 0.18             |
| <b>MEC</b>        | MEC          | 1.47             |
| <b>MECS</b>       | MECS         | 0.46             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.06             |
| <b>WEC</b>        | WEC          | 0.16             |

### 13.6.8 Index 8

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720403 | 314692    | 6FARMVIL | DVP           | 314677  | 6BUCKING | DVP         | 1      | DVP_P4-2:<br>511T591 | breaker | 684.0      | 113.42                | 114.52                 | DC    | 16.78     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.69      |
| 315150 | 1BUGGS 1     | 13.28     |
| 315151 | 1BUGGS 2     | 13.28     |
| 315153 | 1CLOVER1     | 15.94     |
| 315154 | 1CLOVER2     | 15.73     |
| 315159 | 1KERR 2      | 1.04      |
| 315266 | 1PLYWOOD A   | 1.07      |
| 924021 | AB2-043 C O1 | 0.53      |
| 924022 | AB2-043 E O1 | 7.09      |
| 924161 | AB2-060 C O1 | 1.55      |
| 924162 | AB2-060 E O1 | 6.0       |
| 924301 | AB2-077 C O1 | 0.33      |
| 924302 | AB2-077 E O1 | 1.8       |
| 924311 | AB2-078 C O1 | 0.33      |
| 924312 | AB2-078 E O1 | 1.8       |
| 924321 | AB2-079 C O1 | 0.33      |
| 924322 | AB2-079 E O1 | 1.8       |
| 924401 | AB2-089 C    | 1.92      |
| 924402 | AB2-089 E    | 0.99      |
| 925611 | AC1-036 C    | 0.22      |
| 925612 | AC1-036 E    | 1.66      |
| 925781 | AC1-054 C O1 | 6.08      |
| 925782 | AC1-054 E O1 | 2.8       |
| 925831 | AC1-062      | 0.09      |
| 925991 | AC1-075 C    | 4.97      |
| 925992 | AC1-075 E    | 2.82      |
| 926021 | AC1-080 C    | 1.66      |
| 926022 | AC1-080 E    | 0.94      |
| 926271 | AC1-105 C O1 | 6.79      |
| 926272 | AC1-105 E O1 | 3.38      |
| 927251 | AC1-221 C    | 1.67      |
| 927252 | AC1-221 E    | 1.67      |
| 927261 | AC1-222 C    | 4.08      |
| 927262 | AC1-222 E    | 3.89      |
| 932761 | AC2-100 C    | 3.85      |
| 932762 | AC2-100 E    | 1.88      |
| 934231 | AD1-050 C    | 4.23      |
| 934232 | AD1-050 E    | 2.31      |
| 934311 | AD1-055 C    | 2.83      |
| 934312 | AD1-055 E    | 0.73      |
| 934341 | AD1-058 C    | 4.19      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 934342  | AD1-058 E    | 1.06      |
| 934611  | AD1-087 C O1 | 12.08     |
| 934612  | AD1-087 E O1 | 5.68      |
| 934621  | AD1-088 C    | 29.92     |
| 934622  | AD1-088 E    | 14.04     |
| 934991  | AD1-131 C    | 1.37      |
| 934992  | AD1-131 E    | 0.92      |
| 935171  | AD1-152 C O1 | 12.0      |
| 935172  | AD1-152 E O1 | 8.0       |
| 935221  | AD1-157 C    | 0.47      |
| 935222  | AD1-157 E    | 2.59      |
| 935231  | AD1-160 C    | 2.85      |
| 935232  | AD1-160 E    | 3.93      |
| 936261  | AD2-033 C    | 23.78     |
| 936262  | AD2-033 E    | 15.85     |
| 936331  | AD2-043 C    | 5.29      |
| 936332  | AD2-043 E    | 6.26      |
| 936361  | AD2-046 C O1 | 9.37      |
| 936362  | AD2-046 E O1 | 4.31      |
| 936481  | AD2-063 C O1 | 23.85     |
| 936482  | AD2-063 E O1 | 15.9      |
| 937481  | AD2-202 C O1 | 3.33      |
| 937482  | AD2-202 E O1 | 1.68      |
| 938371  | AE1-056 C    | 16.75     |
| 938372  | AE1-056 E    | 9.15      |
| 939181  | AE1-148 C O1 | 9.42      |
| 939182  | AE1-148 E O1 | 6.28      |
| 939371  | AE1-168 C    | 33.77     |
| 939372  | AE1-168 E    | 22.51     |
| 940241  | AE2-006      | 0.94      |
| 940661  | AE2-053      | 3.51      |
| 941791  | AE2-182 C    | 5.41      |
| 941792  | AE2-182 E    | 2.55      |
| 942451  | AE2-258      | 3.23      |
| 942461  | AE2-259 C O1 | 30.48     |
| 942462  | AE2-259 E O1 | 20.32     |
| 942711  | AE2-287 C O1 | 10.07     |
| 942712  | AE2-287 E O1 | 6.71      |
| 942751  | AE2-291 C O1 | 6.68      |
| 942752  | AE2-291 E O1 | 4.46      |
| 942761  | AE2-292 C O1 | 8.32      |
| 942762  | AE2-292 E O1 | 5.55      |
| 943051  | AE2-328 C    | 34.04     |
| 943052  | AE2-328 E    | 15.94     |
| AA2-074 | AA2-074      | 2.39      |
| CARR    | CARR         | 0.25      |
| CBM-S1  | CBM-S1       | 5.45      |
| CBM-S2  | CBM-S2       | 6.69      |
| CBM-W1  | CBM-W1       | 5.11      |
| CBM-W2  | CBM-W2       | 35.13     |
| CIN     | CIN          | 2.33      |
| CPL     | CPL          | 3.52      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007</b>      | G-007      | 0.82             |
| <b>IPL</b>        | IPL        | 1.45             |
| <b>LGEE</b>       | LGEE       | 0.67             |
| <b>MEC</b>        | MEC        | 5.3              |
| <b>MECS</b>       | MECS       | 2.02             |
| <b>O-066</b>      | O-066      | 5.24             |
| <b>RENSSELAER</b> | RENSSELAER | 0.2              |
| <b>WEC</b>        | WEC        | 0.62             |

### 13.6.9 Index 9

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090501 | 314712    | 30TTER R | DVP           | 314666  | 3ALTVSTA | DVP         | 1      | DVP_P1-2: LN 296-A | single | 224.66     | 79.45                 | 81.21                  | DC    | 3.97      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.1       |
| 315150 | 1BUGGS 1     | 6.53      |
| 315151 | 1BUGGS 2     | 6.53      |
| 315153 | 1CLOVER1     | 3.49      |
| 315154 | 1CLOVER2     | 3.45      |
| 315158 | 1KERR 1      | 0.1       |
| 315159 | 1KERR 2      | 0.4       |
| 315160 | 1KERR 3      | 0.39      |
| 315161 | 1KERR 4      | 0.39      |
| 315162 | 1KERR 5      | 0.39      |
| 315163 | 1KERR 6      | 0.39      |
| 315164 | 1KERR 7      | 0.39      |
| 315266 | 1PLYWOOD A   | 0.86      |
| 924021 | AB2-043 C O1 | 0.19      |
| 924161 | AB2-060 C O1 | 0.53      |
| 924301 | AB2-077 C O1 | 0.12      |
| 924311 | AB2-078 C O1 | 0.12      |
| 924321 | AB2-079 C O1 | 0.12      |
| 924401 | AB2-089 C    | 0.75      |
| 925611 | AC1-036 C    | 0.05      |
| 925781 | AC1-054 C O1 | 2.38      |
| 925831 | AC1-062      | 0.01      |
| 925991 | AC1-075 C    | 17.18     |
| 926021 | AC1-080 C    | 5.74      |
| 926271 | AC1-105 C O1 | 5.27      |
| 927251 | AC1-221 C    | 1.66      |
| 927261 | AC1-222 C    | 5.35      |
| 932761 | AC2-100 C    | 3.82      |
| 934231 | AD1-050 C    | 1.65      |
| 934311 | AD1-055 C    | 3.71      |
| 934341 | AD1-058 C    | 4.16      |
| 934611 | AD1-087 C O1 | 4.31      |
| 934621 | AD1-088 C    | 4.21      |
| 934991 | AD1-131 C    | 1.36      |
| 935171 | AD1-152 C O1 | 4.28      |
| 935221 | AD1-157 C    | 0.06      |
| 935231 | AD1-160 C    | 0.38      |
| 936261 | AD2-033 C    | 5.61      |
| 936331 | AD2-043 C    | 7.25      |
| 936361 | AD2-046 C O1 | 3.54      |
| 936481 | AD2-063 C O1 | 6.88      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 937481     | AD2-202 C O1 | 1.19      |
| 938371     | AE1-056 C    | 2.23      |
| 939181     | AE1-148 C O1 | 3.53      |
| 939371     | AE1-168 C    | 5.76      |
| 940241     | AE2-006      | 0.2       |
| 940661     | AE2-053      | 1.32      |
| 941791     | AE2-182 C    | 0.76      |
| 942451     | AE2-258      | 1.14      |
| 942711     | AE2-287 C O1 | 3.97      |
| 942751     | AE2-291 C O1 | 33.09     |
| 942761     | AE2-292 C O1 | 41.2      |
| BLUEG      | BLUEG        | 3.49      |
| CALDERWOOD | CALDERWOOD   | 0.3       |
| CANNELTON  | CANNELTON    | 0.2       |
| CATAWBA    | CATAWBA      | 0.05      |
| CBM-N      | CBM-N        | 0.1       |
| CHEOAH     | CHEOAH       | 0.27      |
| CHILHOWEE  | CHILHOWEE    | 0.1       |
| COFFEEN    | COFFEEN      | 0.34      |
| COTTONWOOD | COTTONWOOD   | 1.14      |
| CPL        | CPL          | 0.28      |
| DUCKCREEK  | DUCKCREEK    | 0.74      |
| EDWARDS    | EDWARDS      | 0.34      |
| ELMERSMITH | ELMERSMITH   | 0.35      |
| FARMERCITY | FARMERCITY   | 0.22      |
| G-007A     | G-007A       | 0.51      |
| GIBSON     | GIBSON       | 0.14      |
| NEWTON     | NEWTON       | 0.9       |
| NYISO      | NYISO        | 0.42      |
| PRAIRIE    | PRAIRIE      | 1.62      |
| SANTEETLA  | SANTEETLA    | 0.08      |
| SMITHLAND  | SMITHLAND    | 0.13      |
| TATANKA    | TATANKA      | 0.4       |
| TILTON     | TILTON       | 0.42      |
| TRIMBLE    | TRIMBLE      | 0.39      |
| TVA        | TVA          | 1.01      |
| UNIONPOWER | UNIONPOWER   | 0.38      |
| VFT        | VFT          | 1.34      |

### 13.6.10 Index 10

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS     | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|------------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090779 | 314747    | 6BREMO   | DVP           | 313867  | 6BREMODIST | DVP         | 1      | DVP_P1-2: LN 556 | single | 661.76     | 107.57                | 108.58                 | DC    | 6.66      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.37      |
| 314704 | 3LAWRENC     | 0.12      |
| 315126 | 1ROARAP2     | 0.33      |
| 315150 | 1BUGGS 1     | 7.72      |
| 315151 | 1BUGGS 2     | 7.72      |
| 315153 | 1CLOVER1     | 8.63      |
| 315154 | 1CLOVER2     | 8.52      |
| 315158 | 1KERR 1      | 0.15      |
| 315159 | 1KERR 2      | 0.63      |
| 315160 | 1KERR 3      | 0.62      |
| 315161 | 1KERR 4      | 0.62      |
| 315162 | 1KERR 5      | 0.62      |
| 315163 | 1KERR 6      | 0.62      |
| 315164 | 1KERR 7      | 0.62      |
| 315170 | 1BREMO 3     | 21.85     |
| 315171 | 1BREMO 4     | 48.01     |
| 315191 | 1BEARGRDN G1 | 7.96      |
| 315192 | 1BEARGRDN G2 | 7.96      |
| 315193 | 1BEARGRDN S1 | 16.37     |
| 315266 | 1PLYWOOD A   | 0.61      |
| 920291 | AA2-127      | 1.65      |
| 923861 | AB2-026 C    | 0.36      |
| 923911 | AB2-031 C O1 | 0.76      |
| 923991 | AB2-040 C O1 | 0.3       |
| 924021 | AB2-043 C O1 | 0.3       |
| 924031 | AB2-045 C    | 0.59      |
| 924161 | AB2-060 C O1 | 0.88      |
| 924301 | AB2-077 C O1 | 0.19      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924401 | AB2-089 C    | 1.19      |
| 925171 | AB2-174 C O1 | 2.39      |
| 925611 | AC1-036 C    | 0.12      |
| 925781 | AC1-054 C O1 | 3.84      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 3.05      |
| 926021 | AC1-080 C    | 1.02      |
| 926271 | AC1-105 C O1 | 3.87      |
| 927251 | AC1-221 C    | 1.01      |
| 927261 | AC1-222 C    | 2.36      |
| 931231 | AB1-173 C    | 0.09      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.09      |
| 932511     | AC2-071 C    | 0.58      |
| 932761     | AC2-100 C    | 2.33      |
| 933501     | AC2-165 C    | 14.27     |
| 934201     | AD1-047 C    | 2.71      |
| 934231     | AD1-050 C    | 2.63      |
| 934311     | AD1-055 C    | 1.64      |
| 934341     | AD1-058 C    | 2.53      |
| 934611     | AD1-087 C O1 | 6.64      |
| 934621     | AD1-088 C    | 15.85     |
| 934991     | AD1-131 C    | 0.83      |
| 935171     | AD1-152 C O1 | 6.6       |
| 935221     | AD1-157 C    | 0.25      |
| 935231     | AD1-160 C    | 1.51      |
| 936261     | AD2-033 C    | 13.05     |
| 936331     | AD2-043 C    | 3.06      |
| 936361     | AD2-046 C O1 | 5.59      |
| 936481     | AD2-063 C O1 | 13.31     |
| 937481     | AD2-202 C O1 | 1.83      |
| 937571     | AD2-169 C    | 3.35      |
| 938371     | AE1-056 C    | 8.89      |
| 938551     | AE1-074 C    | 0.78      |
| 938561     | AE1-075 C    | 2.6       |
| 938821     | AE1-108 C O1 | 27.5      |
| 939181     | AE1-148 C O1 | 5.6       |
| 939371     | AE1-168 C    | 18.15     |
| 939841     | AE1-220 C O1 | 8.76      |
| 940241     | AE2-006      | 0.51      |
| 940661     | AE2-053      | 2.08      |
| 941011     | AE2-092 C    | 16.65     |
| 941791     | AE2-182 C    | 2.87      |
| 942451     | AE2-258      | 1.84      |
| 942461     | AE2-259 C O1 | 15.98     |
| 942711     | AE2-287 C O1 | 6.66      |
| 942751     | AE2-291 C O1 | 4.27      |
| 942761     | AE2-292 C O1 | 5.32      |
| 943051     | AE2-328 C    | 17.8      |
| AA2-074    | AA2-074      | 1.72      |
| CARR       | CARR         | 0.26      |
| CBM-S1     | CBM-S1       | 2.58      |
| CBM-S2     | CBM-S2       | 4.56      |
| CBM-W1     | CBM-W1       | 0.87      |
| CBM-W2     | CBM-W2       | 15.09     |
| CIN        | CIN          | 0.48      |
| CPL        | CPL          | 2.53      |
| IPL        | IPL          | 0.27      |
| LGEE       | LGEE         | 0.14      |
| MEC        | MEC          | 1.66      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.12      |

### 13.6.11 Index 11

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|----------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720140 | 924510    | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW | DVP         | 1      | DVP_P4-2: 23872 | breaker | 427.0      | 144.16                | 154.64                 | DC    | 44.75     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314572     | 3EMPORIA     | 1.1       |
| 314704     | 3LAWRENC     | 0.55      |
| 923911     | AB2-031 C O1 | 4.0       |
| 923912     | AB2-031 E O1 | 1.97      |
| 923991     | AB2-040 C O1 | 1.6       |
| 923992     | AB2-040 E O1 | 10.75     |
| 924022     | AB2-043 E O1 | 3.03      |
| 924162     | AB2-060 E O1 | 2.47      |
| 924302     | AB2-077 E O1 | 0.75      |
| 924312     | AB2-078 E O1 | 0.75      |
| 924322     | AB2-079 E O1 | 0.75      |
| 924511     | AB2-100 C    | 51.74     |
| 924512     | AB2-100 E    | 25.48     |
| 925171     | AB2-174 C O1 | 14.8      |
| 925172     | AB2-174 E O1 | 13.39     |
| 925612     | AC1-036 E    | 0.4       |
| 931231     | AB1-173 C    | 0.49      |
| 931232     | AB1-173 E    | 1.88      |
| 931241     | AB1-173AC    | 0.49      |
| 931242     | AB1-173AE    | 1.88      |
| 934201     | AD1-047 C    | 14.34     |
| 934202     | AD1-047 E    | 9.56      |
| 936261     | AD2-033 C    | 6.32      |
| 936262     | AD2-033 E    | 4.21      |
| 936481     | AD2-063 C O1 | 8.08      |
| 936482     | AD2-063 E O1 | 5.39      |
| 937571     | AD2-169 C    | 14.41     |
| 937572     | AD2-169 E    | 9.61      |
| 939071     | AE1-135 C O1 | 90.68     |
| 939072     | AE1-135 E O1 | 60.45     |
| 940241     | AE2-006      | 0.22      |
| 940481     | AE2-033 C    | 67.26     |
| 940482     | AE2-033 E    | 45.34     |
| 942451     | AE2-258      | 1.38      |
| 942471     | AE2-260 C O1 | 62.49     |
| 942472     | AE2-260 E O1 | 88.64     |
| 942711     | AE2-287 C O1 | 26.85     |
| 942712     | AE2-287 E O1 | 17.9      |
| BLUEG      | BLUEG        | 0.16      |
| CALDERWOOD | CALDERWOOD   | 0.06      |
| CANNELTON  | CANNELTON    | 0.01      |
| CARR       | CARR         | 0.0       |

| <b>Bus #</b> | <b>Bus</b> | <b>MW Impact</b> |
|--------------|------------|------------------|
| CATAWBA      | CATAWBA    | 0.07             |
| CHEOAH       | CHEOAH     | 0.06             |
| CHILHOWEE    | CHILHOWEE  | 0.02             |
| COFFEEN      | COFFEEN    | 0.02             |
| COTTONWOOD   | COTTONWOOD | 0.2              |
| DUCKCREEK    | DUCKCREEK  | 0.04             |
| EDWARDS      | EDWARDS    | 0.02             |
| ELMERSMITH   | ELMERSMITH | 0.02             |
| FARMERCITY   | FARMERCITY | 0.02             |
| G-007        | G-007      | 0.0              |
| GIBSON       | GIBSON     | 0.01             |
| HAMLET       | HAMLET     | 0.19             |
| NEWTON       | NEWTON     | 0.06             |
| O-066        | O-066      | 0.01             |
| PRAIRIE      | PRAIRIE    | 0.14             |
| RENSSELAER   | RENSSELAER | 0.0              |
| SANTEETLA    | SANTEETLA  | 0.02             |
| SMITHLAND    | SMITHLAND  | 0.01             |
| TATANKA      | TATANKA    | 0.03             |
| TILTON       | TILTON     | 0.02             |
| TRIMBLE      | TRIMBLE    | 0.02             |
| TVA          | TVA        | 0.16             |
| UNIONPOWER   | UNIONPOWER | 0.09             |

### 13.6.12 Index 12

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720611 | 314282    | 6CARSON  | DVP           | 314331  | 6POE   | DVP         | 1      | DVP_P4-2:<br>24972-4 | breaker | 830.0      | 99.34                 | 103.04                 | DC    | 30.7      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.61      |
| 314557 | 3BETHELC     | 0.58      |
| 314572 | 3EMPORIA     | 0.75      |
| 314574 | 6EVERETS     | 2.53      |
| 314578 | 3HORNRTN     | 3.68      |
| 314582 | 3KELFORD     | 2.67      |
| 314603 | 3SCOT NK     | 2.69      |
| 314617 | 3TUNIS       | 0.58      |
| 314620 | 6CASHIE      | 0.44      |
| 314623 | 3WITAKRS     | 1.08      |
| 314704 | 3LAWRENC     | 0.37      |
| 315126 | 1ROARAP2     | 1.15      |
| 315131 | 1EDGECEMA    | 7.24      |
| 315132 | 1EDGECEMB    | 7.24      |
| 315136 | 1ROSEMG1     | 2.19      |
| 315137 | 1ROSEMS1     | 1.36      |
| 315138 | 1ROSEMG2     | 1.03      |
| 315139 | 1GASTONA     | 3.26      |
| 315141 | 1GASTONB     | 3.26      |
| 315150 | 1BUGGS 1     | 6.46      |
| 315151 | 1BUGGS 2     | 6.46      |
| 900672 | V4-068 E     | 0.2       |
| 917332 | Z2-043 E     | 0.76      |
| 917342 | Z2-044 E     | 0.46      |
| 917512 | Z2-088 E OP1 | 2.58      |
| 918492 | AA1-063AE OP | 3.88      |
| 918512 | AA1-065 E OP | 2.79      |
| 918532 | AA1-067 E    | 0.45      |
| 918562 | AA1-072 E    | 0.13      |
| 919692 | AA2-053 E    | 3.92      |
| 919701 | AA2-057 C    | 5.95      |
| 919702 | AA2-057 E    | 2.98      |
| 920042 | AA2-088 E OP | 6.76      |
| 920592 | AA2-165 E    | 0.39      |
| 920672 | AA2-174 E    | 0.45      |
| 923851 | AB2-025 C    | 0.94      |
| 923852 | AB2-025 E    | 3.48      |
| 923911 | AB2-031 C O1 | 3.5       |
| 923912 | AB2-031 E O1 | 1.72      |
| 923991 | AB2-040 C O1 | 1.4       |
| 923992 | AB2-040 E O1 | 9.39      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 924022 | AB2-043 E O1 | 3.24      |
| 924152 | AB2-059 E O1 | 4.16      |
| 924162 | AB2-060 E O1 | 2.64      |
| 924302 | AB2-077 E O1 | 0.83      |
| 924312 | AB2-078 E O1 | 0.83      |
| 924322 | AB2-079 E O1 | 0.83      |
| 924401 | AB2-089 C    | 1.64      |
| 924402 | AB2-089 E    | 0.85      |
| 924491 | AB2-098 C    | 0.35      |
| 924492 | AB2-098 E    | 0.15      |
| 924501 | AB2-099 C    | 0.41      |
| 924502 | AB2-099 E    | 0.18      |
| 924511 | AB2-100 C    | 26.3      |
| 924512 | AB2-100 E    | 12.96     |
| 925122 | AB2-169 E    | 3.03      |
| 925171 | AB2-174 C O1 | 11.6      |
| 925172 | AB2-174 E O1 | 10.49     |
| 925591 | AC1-034 C    | 5.23      |
| 925592 | AC1-034 E    | 3.95      |
| 925781 | AC1-054 C O1 | 5.85      |
| 925782 | AC1-054 E O1 | 2.7       |
| 926071 | AC1-086 C    | 30.05     |
| 926072 | AC1-086 E    | 13.68     |
| 926201 | AC1-098 C    | 5.25      |
| 926202 | AC1-098 E    | 3.13      |
| 926211 | AC1-099 C    | 1.76      |
| 926212 | AC1-099 E    | 1.03      |
| 927021 | AC1-189 C    | 5.59      |
| 927022 | AC1-189 E    | 2.79      |
| 927141 | AC1-208 C    | 8.29      |
| 927142 | AC1-208 E    | 3.68      |
| 930402 | AB1-081 E O1 | 2.94      |
| 930861 | AB1-132 C O1 | 2.49      |
| 930862 | AB1-132 E O1 | 8.74      |
| 931231 | AB1-173 C    | 0.43      |
| 931232 | AB1-173 E    | 1.64      |
| 931241 | AB1-173AC    | 0.43      |
| 931242 | AB1-173AE    | 1.64      |
| 932631 | AC2-084 C    | 7.48      |
| 932632 | AC2-084 E    | 3.69      |
| 934201 | AD1-047 C    | 12.53     |
| 934202 | AD1-047 E    | 8.35      |
| 934231 | AD1-050 C    | 3.62      |
| 934232 | AD1-050 E    | 1.98      |
| 934331 | AD1-057 C O1 | 10.81     |
| 934332 | AD1-057 E O1 | 5.77      |
| 936261 | AD2-033 C    | 6.73      |
| 936262 | AD2-033 E    | 4.49      |
| 936361 | AD2-046 C O1 | 6.06      |
| 936362 | AD2-046 E O1 | 2.79      |
| 936401 | AD2-051 C O1 | 6.21      |
| 936402 | AD2-051 E O1 | 2.67      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 936481  | AD2-063 C O1 | 8.62      |
| 936482  | AD2-063 E O1 | 5.75      |
| 936531  | AD2-068 C    | 2.81      |
| 936532  | AD2-068 E    | 1.45      |
| 936701  | AD2-089 C    | 5.19      |
| 936702  | AD2-089 E    | 3.46      |
| 936711  | AD2-090 C O1 | 3.71      |
| 936712  | AD2-090 E O1 | 2.47      |
| 937571  | AD2-169 C    | 14.66     |
| 937572  | AD2-169 E    | 9.78      |
| 938171  | AE1-026 C1 O | 14.49     |
| 938172  | AE1-026 C2 O | 2.1       |
| 938173  | AE1-026 E O1 | 4.38      |
| 938221  | AE1-035 C    | 1.41      |
| 938222  | AE1-035 E    | 0.7       |
| 938661  | AE1-088      | 0.92      |
| 939071  | AE1-135 C O1 | 49.36     |
| 939072  | AE1-135 E O1 | 32.9      |
| 939181  | AE1-148 C O1 | 5.96      |
| 939182  | AE1-148 E O1 | 3.97      |
| 940481  | AE2-033 C    | 48.0      |
| 940482  | AE2-033 E    | 32.36     |
| 940521  | AE2-037 C O1 | 5.81      |
| 940522  | AE2-037 E O1 | 2.81      |
| 940541  | AE2-040      | 9.96      |
| 940571  | AE2-044 C    | 3.43      |
| 940572  | AE2-044 E    | 1.47      |
| 940652  | AE2-052 BAT  | 1.4       |
| 940661  | AE2-053      | 2.22      |
| 941532  | AE2-150 EBAT | 2.43      |
| 941541  | AE2-151 C    | 0.77      |
| 941542  | AE2-151 E    | 0.41      |
| 941951  | AE2-207      | 2.22      |
| 942451  | AE2-258      | 1.47      |
| 942471  | AE2-260 C O1 | 34.01     |
| 942472  | AE2-260 E O1 | 48.25     |
| 942711  | AE2-287 C O1 | 18.42     |
| 942712  | AE2-287 E O1 | 12.28     |
| 943171  | AE2-346 C    | 1.24      |
| 943172  | AE2-346 E    | 0.53      |
| AA2-074 | AA2-074      | 1.9       |
| CARR    | CARR         | 0.18      |
| CBM-S1  | CBM-S1       | 4.45      |
| CBM-S2  | CBM-S2       | 5.15      |
| CBM-W1  | CBM-W1       | 4.55      |
| CBM-W2  | CBM-W2       | 29.12     |
| CIN     | CIN          | 2.05      |
| CPL     | CPL          | 2.8       |
| G-007   | G-007        | 0.61      |
| IPL     | IPL          | 1.29      |
| LGEE    | LGEE         | 0.59      |
| MEC     | MEC          | 4.54      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>MECS</b>       | MECS       | 1.95             |
| <b>O-066</b>      | O-066      | 3.89             |
| <b>RENSSELAER</b> | RENSSELAER | 0.14             |
| <b>WEC</b>        | WEC        | 0.55             |

### 13.6.13 Index 13

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720432 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 1      | DVP_P4-2:<br>H2T2068 | breaker | 264.5      | 94.18                 | 96.38                  | DC    | 12.95     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315150 | 1BUGGS 1     | 16.56     |
| 315151 | 1BUGGS 2     | 16.56     |
| 315156 | 1HALLBR1     | 1.0       |
| 315165 | 1HURT 1      | 5.69      |
| 315166 | 1HURT 2      | 5.69      |
| 315266 | 1PLYWOOD A   | 2.43      |
| 924021 | AB2-043 C O1 | 0.44      |
| 924022 | AB2-043 E O1 | 5.94      |
| 924161 | AB2-060 C O1 | 1.25      |
| 924162 | AB2-060 E O1 | 4.84      |
| 924301 | AB2-077 C O1 | 0.29      |
| 924302 | AB2-077 E O1 | 1.58      |
| 924311 | AB2-078 C O1 | 0.29      |
| 924312 | AB2-078 E O1 | 1.58      |
| 924321 | AB2-079 C O1 | 0.29      |
| 924322 | AB2-079 E O1 | 1.58      |
| 924401 | AB2-089 C    | 1.56      |
| 924402 | AB2-089 E    | 0.8       |
| 925611 | AC1-036 C    | 0.1       |
| 925612 | AC1-036 E    | 0.78      |
| 925661 | AC1-042 C    | 1.79      |
| 925662 | AC1-042 E    | 2.92      |
| 925781 | AC1-054 C O1 | 4.84      |
| 925782 | AC1-054 E O1 | 2.23      |
| 925991 | AC1-075 C    | 12.59     |
| 925992 | AC1-075 E    | 7.13      |
| 926021 | AC1-080 C    | 4.21      |
| 926022 | AC1-080 E    | 2.37      |
| 926271 | AC1-105 C O1 | 14.84     |
| 926272 | AC1-105 E O1 | 7.39      |
| 926641 | AC1-145 C    | 2.13      |
| 926642 | AC1-145 E    | 3.48      |
| 927261 | AC1-222 C    | 10.59     |
| 927262 | AC1-222 E    | 10.08     |
| 934231 | AD1-050 C    | 3.43      |
| 934232 | AD1-050 E    | 1.88      |
| 934311 | AD1-055 C    | 7.35      |
| 934312 | AD1-055 E    | 1.9       |
| 935222 | AD1-157 E    | 0.63      |
| 935231 | AD1-160 C    | 0.69      |
| 935232 | AD1-160 E    | 0.95      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 936261     | AD2-033 C    | 12.4      |
| 936262     | AD2-033 E    | 8.26      |
| 936331     | AD2-043 C    | 13.72     |
| 936332     | AD2-043 E    | 16.24     |
| 936361     | AD2-046 C O1 | 7.81      |
| 936362     | AD2-046 E O1 | 3.59      |
| 936481     | AD2-063 C O1 | 15.84     |
| 936482     | AD2-063 E O1 | 10.56     |
| 938371     | AE1-056 C    | 4.05      |
| 938372     | AE1-056 E    | 2.21      |
| 939181     | AE1-148 C O1 | 7.86      |
| 939182     | AE1-148 E O1 | 5.24      |
| 939371     | AE1-168 C    | 11.58     |
| 939372     | AE1-168 E    | 7.72      |
| 939941     | AE1-230 C1   | 0.81      |
| 939942     | AE1-230 E1   | 0.54      |
| 939943     | AE1-230 E2   | 0.48      |
| 940241     | AE2-006      | 0.44      |
| 940661     | AE2-053      | 2.92      |
| 941801     | AE2-185 C    | 5.05      |
| 941802     | AE2-185 E    | 1.68      |
| 941821     | AE2-187 C    | 5.05      |
| 941822     | AE2-187 E    | 1.68      |
| 942331     | AE2-246      | 1.57      |
| 942451     | AE2-258      | 2.7       |
| 942461     | AE2-259 C O1 | 4.29      |
| 942462     | AE2-259 E O1 | 2.86      |
| 942671     | AE2-283 C    | 4.45      |
| 942672     | AE2-283 E    | 2.34      |
| 942711     | AE2-287 C O1 | 7.77      |
| 942712     | AE2-287 E O1 | 5.18      |
| 942751     | AE2-291 C O1 | 16.62     |
| 942752     | AE2-291 E O1 | 11.08     |
| 942761     | AE2-292 C O1 | 20.69     |
| 942762     | AE2-292 E O1 | 13.79     |
| BLUEG      | BLUEG        | 2.18      |
| CALDERWOOD | CALDERWOOD   | 0.66      |
| CANNELTON  | CANNELTON    | 0.16      |
| CATAWBA    | CATAWBA      | 0.78      |
| CBM-N      | CBM-N        | 0.03      |
| CHEOAH     | CHEOAH       | 0.62      |
| CHILHOWEE  | CHILHOWEE    | 0.21      |
| COFFEEN    | COFFEEN      | 0.29      |
| COTTONWOOD | COTTONWOOD   | 2.09      |
| DUCKCREEK  | DUCKCREEK    | 0.57      |
| EDWARDS    | EDWARDS      | 0.25      |
| ELMERSMITH | ELMERSMITH   | 0.3       |
| FARMERCITY | FARMERCITY   | 0.22      |
| G-007A     | G-007A       | 0.16      |
| GIBSON     | GIBSON       | 0.1       |
| HAMLET     | HAMLET       | 1.48      |
| NEWTON     | NEWTON       | 0.74      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>NYISO</b>      | NYISO      | 0.13             |
| <b>PRAIRIE</b>    | PRAIRIE    | 1.67             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.19             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.16             |
| <b>TATANKA</b>    | TATANKA    | 0.36             |
| <b>TILTON</b>     | TILTON     | 0.29             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.24             |
| <b>TVA</b>        | TVA        | 1.73             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.93             |
| <b>VFT</b>        | VFT        | 0.43             |

### 13.6.14 Index 14

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME      | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720473 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2      | DVP_P4-2: 3202 | breaker | 279.1      | 90.41                 | 92.74                  | DC    | 14.47     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315150 | 1BUGGS 1     | 18.94     |
| 315151 | 1BUGGS 2     | 18.94     |
| 315156 | 1HALLBR1     | 1.2       |
| 315165 | 1HURT 1      | 6.78      |
| 315166 | 1HURT 2      | 6.78      |
| 315266 | 1PLYWOOD A   | 2.78      |
| 924021 | AB2-043 C O1 | 0.5       |
| 924022 | AB2-043 E O1 | 6.68      |
| 924161 | AB2-060 C O1 | 1.41      |
| 924162 | AB2-060 E O1 | 5.44      |
| 924301 | AB2-077 C O1 | 0.33      |
| 924302 | AB2-077 E O1 | 1.78      |
| 924311 | AB2-078 C O1 | 0.33      |
| 924312 | AB2-078 E O1 | 1.78      |
| 924321 | AB2-079 C O1 | 0.33      |
| 924322 | AB2-079 E O1 | 1.78      |
| 924401 | AB2-089 C    | 1.83      |
| 924402 | AB2-089 E    | 0.94      |
| 925611 | AC1-036 C    | 0.11      |
| 925612 | AC1-036 E    | 0.84      |
| 925661 | AC1-042 C    | 2.17      |
| 925662 | AC1-042 E    | 3.54      |
| 925781 | AC1-054 C O1 | 5.69      |
| 925782 | AC1-054 E O1 | 2.62      |
| 925991 | AC1-075 C    | 14.49     |
| 925992 | AC1-075 E    | 8.21      |
| 926021 | AC1-080 C    | 4.84      |
| 926022 | AC1-080 E    | 2.72      |
| 926271 | AC1-105 C O1 | 16.91     |
| 926272 | AC1-105 E O1 | 8.42      |
| 926641 | AC1-145 C    | 2.58      |
| 926642 | AC1-145 E    | 4.21      |
| 927261 | AC1-222 C    | 12.1      |
| 927262 | AC1-222 E    | 11.52     |
| 934231 | AD1-050 C    | 4.03      |
| 934232 | AD1-050 E    | 2.2       |
| 934311 | AD1-055 C    | 8.4       |
| 934312 | AD1-055 E    | 2.17      |
| 935222 | AD1-157 E    | 0.61      |
| 935231 | AD1-160 C    | 0.67      |
| 935232 | AD1-160 E    | 0.92      |
| 936261 | AD2-033 C    | 13.5      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 936262     | AD2-033 E    | 9.0       |
| 936331     | AD2-043 C    | 15.68     |
| 936332     | AD2-043 E    | 18.56     |
| 936361     | AD2-046 C O1 | 9.1       |
| 936362     | AD2-046 E O1 | 4.18      |
| 936481     | AD2-063 C O1 | 17.58     |
| 936482     | AD2-063 E O1 | 11.72     |
| 938371     | AE1-056 C    | 3.94      |
| 938372     | AE1-056 E    | 2.15      |
| 939181     | AE1-148 C O1 | 9.12      |
| 939182     | AE1-148 E O1 | 6.08      |
| 939371     | AE1-168 C    | 12.01     |
| 939372     | AE1-168 E    | 8.01      |
| 939941     | AE1-230 C1   | 0.98      |
| 939942     | AE1-230 E1   | 0.65      |
| 939943     | AE1-230 E2   | 0.58      |
| 940241     | AE2-006      | 0.47      |
| 940661     | AE2-053      | 3.4       |
| 941801     | AE2-185 C    | 6.11      |
| 941802     | AE2-185 E    | 2.04      |
| 941821     | AE2-187 C    | 6.11      |
| 941822     | AE2-187 E    | 2.04      |
| 942331     | AE2-246      | 1.89      |
| 942451     | AE2-258      | 3.04      |
| 942671     | AE2-283 C    | 5.38      |
| 942672     | AE2-283 E    | 2.82      |
| 942711     | AE2-287 C O1 | 8.68      |
| 942712     | AE2-287 E O1 | 5.79      |
| 942751     | AE2-291 C O1 | 19.23     |
| 942752     | AE2-291 E O1 | 12.82     |
| 942761     | AE2-292 C O1 | 23.95     |
| 942762     | AE2-292 E O1 | 15.97     |
| CALDERWOOD | CALDERWOOD   | 0.15      |
| CARR       | CARR         | 0.03      |
| CATAWBA    | CATAWBA      | 0.3       |
| CBM-W1     | CBM-W1       | 0.38      |
| CHEOAH     | CHEOAH       | 0.14      |
| CHILHOWEE  | CHILHOWEE    | 0.05      |
| CIN        | CIN          | 0.21      |
| COTTONWOOD | COTTONWOOD   | 0.39      |
| FARMERCITY | FARMERCITY   | 0.0       |
| G-007      | G-007        | 0.12      |
| HAMLET     | HAMLET       | 0.67      |
| IPL        | IPL          | 0.14      |
| LGEE       | LGEE         | 0.07      |
| MEC        | MEC          | 0.07      |
| MECS       | MECS         | 0.37      |
| O-066      | O-066        | 0.73      |
| PRAIRIE    | PRAIRIE      | 0.02      |
| RENSSELAER | RENSSELAER   | 0.02      |
| SANTEETLA  | SANTEETLA    | 0.04      |
| SMITHLAND  | SMITHLAND    | 0.01      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TVA</b>        | TVA        | 0.29             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.23             |
| <b>WEC</b>        | WEC        | 0.05             |

### 13.6.15 Index 15

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME       | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|-----------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091216 | 313825    | 3PLYWOOD | DVP           | 314696  | 3SEEDGE HILL | DVP         | 1      | DVP_P1-2: LN 45 | single | 141.0      | 100.66                | 104.59                 | DC    | 5.55      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314429     | 3JTRSVLE     | 0.12      |
| 314704     | 3LAWRENC     | 0.09      |
| 315150     | 1BUGGS 1     | 22.56     |
| 315151     | 1BUGGS 2     | 22.56     |
| 315158     | 1KERR 1      | 0.26      |
| 315159     | 1KERR 2      | 1.05      |
| 315160     | 1KERR 3      | 1.03      |
| 315161     | 1KERR 4      | 1.03      |
| 315162     | 1KERR 5      | 1.03      |
| 315163     | 1KERR 6      | 1.03      |
| 315164     | 1KERR 7      | 1.03      |
| 315266     | 1PLYWOOD A   | 4.37      |
| 924021     | AB2-043 C O1 | 0.28      |
| 924161     | AB2-060 C O1 | 0.8       |
| 924301     | AB2-077 C O1 | 0.21      |
| 924311     | AB2-078 C O1 | 0.21      |
| 924321     | AB2-079 C O1 | 0.21      |
| 924401     | AB2-089 C    | 1.89      |
| 925611     | AC1-036 C    | 0.07      |
| 925781     | AC1-054 C O1 | 5.9       |
| 925831     | AC1-062      | 0.02      |
| 934231     | AD1-050 C    | 4.17      |
| 935221     | AD1-157 C    | 0.07      |
| 935231     | AD1-160 C    | 0.41      |
| 936261     | AD2-033 C    | 7.81      |
| 936361     | AD2-046 C O1 | 8.55      |
| 936481     | AD2-063 C O1 | 10.07     |
| 938371     | AE1-056 C    | 2.44      |
| 939181     | AE1-148 C O1 | 8.32      |
| 939371     | AE1-168 C    | 7.14      |
| 940241     | AE2-006      | 0.28      |
| 940661     | AE2-053      | 3.1       |
| 942451     | AE2-258      | 1.73      |
| 942711     | AE2-287 C O1 | 5.55      |
| BLUEG      | BLUEG        | 1.05      |
| CALDERWOOD | CALDERWOOD   | 0.15      |
| CANNELTON  | CANNELTON    | 0.07      |
| CARR       | CARR         | 0.01      |
| CATAWBA    | CATAWBA      | 0.12      |
| CHEOAH     | CHEOAH       | 0.14      |
| CHILHOWEE  | CHILHOWEE    | 0.05      |
| COFFEEN    | COFFEEN      | 0.11      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>COTTONWOOD</b> | COTTONWOOD | 0.53             |
| <b>DUCKCREEK</b>  | DUCKCREEK  | 0.24             |
| <b>EDWARDS</b>    | EDWARDS    | 0.11             |
| <b>ELMERSMITH</b> | ELMERSMITH | 0.12             |
| <b>FARMERCITY</b> | FARMERCITY | 0.08             |
| <b>GIBSON</b>     | GIBSON     | 0.04             |
| <b>HAMLET</b>     | HAMLET     | 0.18             |
| <b>NEWTON</b>     | NEWTON     | 0.29             |
| <b>PRAIRIE</b>    | PRAIRIE    | 0.58             |
| <b>RENSSELAER</b> | RENSSELAER | 0.01             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.04             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.05             |
| <b>TATANKA</b>    | TATANKA    | 0.13             |
| <b>TILTON</b>     | TILTON     | 0.13             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.12             |
| <b>TVA</b>        | TVA        | 0.45             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.21             |

### 13.6.16 Index 16

| ID      | FROM BUS# | FROM BUS  | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-----------|---------------|---------|--------------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090455 | 313845    | 6HATHAWAY | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 2181 | single | 374.0      | 146.66                | 148.34                 | DC    | 6.3       |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.13      |
| 315115 | 1S HAMPT1    | 0.54      |
| 315126 | 1ROARAP2     | 0.81      |
| 315128 | 1ROARAP4     | 0.78      |
| 315131 | 1EDGECEMA    | 24.75     |
| 315132 | 1EDGECEMB    | 24.75     |
| 315136 | 1ROSEMG1     | 2.1       |
| 315137 | 1ROSEMS1     | 1.3       |
| 315138 | 1ROSEMG2     | 0.98      |
| 315139 | 1GASTONA     | 2.52      |
| 315141 | 1GASTONB     | 2.52      |
| 315292 | 1DOMTR78     | 0.58      |
| 315293 | 1DOMTR9      | 0.48      |
| 315294 | 1DOMTR10     | 0.86      |
| 901081 | W1-029 C     | 0.25      |
| 916041 | Z1-036 C     | 0.29      |
| 917331 | Z2-043 C     | 0.23      |
| 917341 | Z2-044 C     | 0.2       |
| 917511 | Z2-088 C OP1 | 1.46      |
| 918491 | AA1-063AC OP | 0.79      |
| 918511 | AA1-065 C OP | 0.72      |
| 918531 | AA1-067 C    | 0.15      |
| 918561 | AA1-072 C    | 0.03      |
| 919691 | AA2-053 C    | 0.83      |
| 919701 | AA2-057 C    | 8.14      |
| 920041 | AA2-088 C OP | 0.46      |
| 920591 | AA2-165 C    | 0.14      |
| 920671 | AA2-174 C    | 0.04      |
| 920691 | AA2-178 C    | 0.54      |
| 923801 | AB2-015 C O1 | 3.95      |
| 923851 | AB2-025 C    | 0.12      |
| 923911 | AB2-031 C O1 | 1.61      |
| 923991 | AB2-040 C O1 | 0.64      |
| 924151 | AB2-059 C O1 | 2.06      |
| 924401 | AB2-089 C    | 0.73      |
| 924491 | AB2-098 C    | 0.41      |
| 924501 | AB2-099 C    | 0.4       |
| 924511 | AB2-100 C    | 8.39      |
| 925121 | AB2-169 C    | 0.49      |
| 925171 | AB2-174 C O1 | 4.93      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925591     | AC1-034 C    | 10.93     |
| 925781     | AC1-054 C O1 | 2.83      |
| 926071     | AC1-086 C    | 23.24     |
| 926201     | AC1-098 C    | 5.92      |
| 926211     | AC1-099 C    | 1.98      |
| 927021     | AC1-189 C    | 9.72      |
| 927141     | AC1-208 C    | 9.06      |
| 930401     | AB1-081 C O1 | 1.74      |
| 930861     | AB1-132 C O1 | 1.92      |
| 931231     | AB1-173 C    | 0.2       |
| 931241     | AB1-173AC    | 0.2       |
| 932631     | AC2-084 C    | 8.44      |
| 933991     | AD1-023 C    | 7.4       |
| 934201     | AD1-047 C    | 5.77      |
| 934231     | AD1-050 C    | 1.6       |
| 934331     | AD1-057 C O1 | 19.81     |
| 934521     | AD1-076 C    | 28.78     |
| 936401     | AD2-051 C O1 | 6.14      |
| 936701     | AD2-089 C    | 14.05     |
| 936711     | AD2-090 C O1 | 3.69      |
| 937571     | AD2-169 C    | 7.4       |
| 938171     | AE1-026 C1 O | 16.32     |
| 938172     | AE1-026 C2 O | 2.36      |
| 938221     | AE1-035 C    | 1.48      |
| 938661     | AE1-088      | 2.05      |
| 938771     | AE1-103 C O1 | 1.56      |
| 939071     | AE1-135 C O1 | 14.1      |
| 940481     | AE2-033 C    | 7.06      |
| 940491     | AE2-034 C    | 3.88      |
| 940521     | AE2-037 C O1 | 5.83      |
| 940541     | AE2-040      | 1.29      |
| 940571     | AE2-044 C    | 7.16      |
| 941501     | AE2-147 C    | 4.64      |
| 941541     | AE2-151 C    | 0.76      |
| 941951     | AE2-207      | 4.63      |
| 942471     | AE2-260 C O1 | 9.71      |
| 942711     | AE2-287 C O1 | 6.3       |
| 942851     | AE2-304 C    | 0.2       |
| 943171     | AE2-346 C    | 1.2       |
| BLUEG      | BLUEG        | 5.91      |
| CALDERWOOD | CALDERWOOD   | 1.2       |
| CANNELTON  | CANNELTON    | 0.4       |
| CATAWBA    | CATAWBA      | 1.17      |
| CBM-N      | CBM-N        | 0.12      |
| CHEOAH     | CHEOAH       | 1.12      |
| CHILHOWEE  | CHILHOWEE    | 0.39      |
| COFFEEN    | COFFEEN      | 0.69      |
| COTTONWOOD | COTTONWOOD   | 4.01      |
| DUCKCREEK  | DUCKCREEK    | 1.41      |
| EDWARDS    | EDWARDS      | 0.63      |
| ELMERSMITH | ELMERSMITH   | 0.71      |
| FARMERCITY | FARMERCITY   | 0.49      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007A</b>     | G-007A     | 0.65             |
| <b>GIBSON</b>     | GIBSON     | 0.25             |
| <b>HAMLET</b>     | HAMLET     | 2.3              |
| <b>NEWTON</b>     | NEWTON     | 1.79             |
| <b>NYISO</b>      | NYISO      | 0.54             |
| <b>PRAIRIE</b>    | PRAIRIE    | 3.73             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.33             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.33             |
| <b>TATANKA</b>    | TATANKA    | 0.84             |
| <b>TILTON</b>     | TILTON     | 0.75             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.65             |
| <b>TVA</b>        | TVA        | 3.37             |
| <b>UNIONPOWER</b> | UNIONPOWER | 1.66             |
| <b>VFT</b>        | VFT        | 1.72             |

### 13.6.17 Index 17

| ID      | FROM BUS# | FROM BUS  | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-----------|---------------|---------|--------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090698 | 313845    | 6HATHAWAY | DVP           | 314591  | 6NASH  | DVP         | 1      | DVP_P1-2: LN 2058 | single | 449.32     | 131.2                 | 132.63                 | DC    | 6.42      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.13      |
| 315115 | 1S HAMPT1    | 0.55      |
| 315126 | 1ROARAP2     | 0.82      |
| 315128 | 1ROARAP4     | 0.79      |
| 315131 | 1EDGECEMA    | 25.25     |
| 315132 | 1EDGECEMB    | 25.25     |
| 315136 | 1ROSEMG1     | 2.14      |
| 315137 | 1ROSEMS1     | 1.33      |
| 315138 | 1ROSEMG2     | 1.0       |
| 315139 | 1GASTONA     | 2.57      |
| 315141 | 1GASTONB     | 2.57      |
| 315292 | 1DOMTR78     | 0.6       |
| 315293 | 1DOMTR9      | 0.49      |
| 315294 | 1DOMTR10     | 0.88      |
| 901081 | W1-029 C     | 0.25      |
| 916041 | Z1-036 C     | 0.3       |
| 917331 | Z2-043 C     | 0.23      |
| 917341 | Z2-044 C     | 0.21      |
| 917511 | Z2-088 C OP1 | 1.49      |
| 918491 | AA1-063AC OP | 0.8       |
| 918511 | AA1-065 C OP | 0.74      |
| 918531 | AA1-067 C    | 0.15      |
| 918561 | AA1-072 C    | 0.03      |
| 919691 | AA2-053 C    | 0.84      |
| 919701 | AA2-057 C    | 8.3       |
| 920041 | AA2-088 C OP | 0.47      |
| 920591 | AA2-165 C    | 0.14      |
| 920671 | AA2-174 C    | 0.04      |
| 920691 | AA2-178 C    | 0.55      |
| 923801 | AB2-015 C O1 | 4.03      |
| 923851 | AB2-025 C    | 0.12      |
| 923911 | AB2-031 C O1 | 1.64      |
| 923991 | AB2-040 C O1 | 0.66      |
| 924151 | AB2-059 C O1 | 2.1       |
| 924401 | AB2-089 C    | 0.74      |
| 924491 | AB2-098 C    | 0.41      |
| 924501 | AB2-099 C    | 0.41      |
| 924511 | AB2-100 C    | 8.56      |
| 925121 | AB2-169 C    | 0.5       |
| 925171 | AB2-174 C O1 | 5.03      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925591     | AC1-034 C    | 11.15     |
| 925781     | AC1-054 C O1 | 2.89      |
| 926071     | AC1-086 C    | 23.71     |
| 926201     | AC1-098 C    | 6.04      |
| 926211     | AC1-099 C    | 2.02      |
| 927021     | AC1-189 C    | 9.92      |
| 927141     | AC1-208 C    | 9.24      |
| 930401     | AB1-081 C O1 | 1.78      |
| 930861     | AB1-132 C O1 | 1.96      |
| 931231     | AB1-173 C    | 0.2       |
| 931241     | AB1-173AC    | 0.2       |
| 932631     | AC2-084 C    | 8.61      |
| 933991     | AD1-023 C    | 7.55      |
| 934201     | AD1-047 C    | 5.89      |
| 934231     | AD1-050 C    | 1.64      |
| 934331     | AD1-057 C O1 | 20.2      |
| 934521     | AD1-076 C    | 29.35     |
| 936401     | AD2-051 C O1 | 6.26      |
| 936701     | AD2-089 C    | 14.33     |
| 936711     | AD2-090 C O1 | 3.77      |
| 937571     | AD2-169 C    | 7.54      |
| 938171     | AE1-026 C1 O | 16.65     |
| 938172     | AE1-026 C2 O | 2.41      |
| 938221     | AE1-035 C    | 1.51      |
| 938661     | AE1-088      | 2.09      |
| 938771     | AE1-103 C O1 | 1.59      |
| 939071     | AE1-135 C O1 | 14.38     |
| 940481     | AE2-033 C    | 7.2       |
| 940491     | AE2-034 C    | 3.96      |
| 940521     | AE2-037 C O1 | 5.95      |
| 940541     | AE2-040      | 1.32      |
| 940571     | AE2-044 C    | 7.3       |
| 941501     | AE2-147 C    | 4.73      |
| 941541     | AE2-151 C    | 0.78      |
| 941951     | AE2-207      | 4.72      |
| 942471     | AE2-260 C O1 | 9.91      |
| 942711     | AE2-287 C O1 | 6.42      |
| 942851     | AE2-304 C    | 0.21      |
| 943171     | AE2-346 C    | 1.23      |
| BLUEG      | BLUEG        | 6.03      |
| CALDERWOOD | CALDERWOOD   | 1.22      |
| CANNELTON  | CANNELTON    | 0.41      |
| CATAWBA    | CATAWBA      | 1.19      |
| CBM-N      | CBM-N        | 0.13      |
| CHEOAH     | CHEOAH       | 1.14      |
| CHILHOWEE  | CHILHOWEE    | 0.4       |
| COFFEEN    | COFFEEN      | 0.7       |
| COTTONWOOD | COTTONWOOD   | 4.09      |
| DUCKCREEK  | DUCKCREEK    | 1.44      |
| EDWARDS    | EDWARDS      | 0.64      |
| ELMERSMITH | ELMERSMITH   | 0.72      |
| FARMERCITY | FARMERCITY   | 0.5       |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007A</b>     | G-007A     | 0.66             |
| <b>GIBSON</b>     | GIBSON     | 0.26             |
| <b>HAMLET</b>     | HAMLET     | 2.34             |
| <b>NEWTON</b>     | NEWTON     | 1.82             |
| <b>NYISO</b>      | NYISO      | 0.55             |
| <b>PRAIRIE</b>    | PRAIRIE    | 3.81             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.34             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.34             |
| <b>TATANKA</b>    | TATANKA    | 0.86             |
| <b>TILTON</b>     | TILTON     | 0.76             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.66             |
| <b>TVA</b>        | TVA        | 3.43             |
| <b>UNIONPOWER</b> | UNIONPOWER | 1.7              |
| <b>VFT</b>        | VFT        | 1.75             |

### 13.6.18 Index 18

| ID      | FROM BUS# | FROM BUS   | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|------------|---------------|---------|----------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090807 | 313867    | 6BREMODIST | DVP           | 314765  | 6MTEAGLE | DVP         | 1      | DVP_P1-2: LN 556 | single | 661.76     | 105.25                | 106.25                 | DC    | 6.66      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.37      |
| 314704 | 3LAWRENC     | 0.12      |
| 315126 | 1ROARAP2     | 0.33      |
| 315150 | 1BUGGS 1     | 7.72      |
| 315151 | 1BUGGS 2     | 7.72      |
| 315153 | 1CLOVER1     | 8.63      |
| 315154 | 1CLOVER2     | 8.52      |
| 315158 | 1KERR 1      | 0.15      |
| 315159 | 1KERR 2      | 0.63      |
| 315160 | 1KERR 3      | 0.62      |
| 315161 | 1KERR 4      | 0.62      |
| 315162 | 1KERR 5      | 0.62      |
| 315163 | 1KERR 6      | 0.62      |
| 315164 | 1KERR 7      | 0.62      |
| 315170 | 1BREMO 3     | 21.85     |
| 315171 | 1BREMO 4     | 48.01     |
| 315191 | 1BEARGRDN G1 | 7.96      |
| 315192 | 1BEARGRDN G2 | 7.96      |
| 315193 | 1BEARGRDN S1 | 16.37     |
| 315266 | 1PLYWOOD A   | 0.61      |
| 920291 | AA2-127      | 1.65      |
| 923861 | AB2-026 C    | 0.36      |
| 923911 | AB2-031 C O1 | 0.76      |
| 923991 | AB2-040 C O1 | 0.3       |
| 924021 | AB2-043 C O1 | 0.3       |
| 924031 | AB2-045 C    | 0.59      |
| 924161 | AB2-060 C O1 | 0.88      |
| 924301 | AB2-077 C O1 | 0.19      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924401 | AB2-089 C    | 1.19      |
| 925171 | AB2-174 C O1 | 2.39      |
| 925611 | AC1-036 C    | 0.12      |
| 925781 | AC1-054 C O1 | 3.84      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 3.05      |
| 926021 | AC1-080 C    | 1.02      |
| 926271 | AC1-105 C O1 | 3.87      |
| 927251 | AC1-221 C    | 1.01      |
| 927261 | AC1-222 C    | 2.36      |
| 931231 | AB1-173 C    | 0.09      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.09      |
| 932511     | AC2-071 C    | 0.58      |
| 932761     | AC2-100 C    | 2.33      |
| 933501     | AC2-165 C    | 14.27     |
| 934201     | AD1-047 C    | 2.71      |
| 934231     | AD1-050 C    | 2.63      |
| 934311     | AD1-055 C    | 1.64      |
| 934341     | AD1-058 C    | 2.53      |
| 934611     | AD1-087 C O1 | 6.64      |
| 934621     | AD1-088 C    | 15.85     |
| 934991     | AD1-131 C    | 0.83      |
| 935171     | AD1-152 C O1 | 6.6       |
| 935221     | AD1-157 C    | 0.25      |
| 935231     | AD1-160 C    | 1.51      |
| 936261     | AD2-033 C    | 13.05     |
| 936331     | AD2-043 C    | 3.06      |
| 936361     | AD2-046 C O1 | 5.59      |
| 936481     | AD2-063 C O1 | 13.31     |
| 937481     | AD2-202 C O1 | 1.83      |
| 937571     | AD2-169 C    | 3.35      |
| 938371     | AE1-056 C    | 8.89      |
| 938551     | AE1-074 C    | 0.78      |
| 938561     | AE1-075 C    | 2.6       |
| 938821     | AE1-108 C O1 | 27.5      |
| 939181     | AE1-148 C O1 | 5.6       |
| 939371     | AE1-168 C    | 18.15     |
| 939841     | AE1-220 C O1 | 8.76      |
| 940241     | AE2-006      | 0.51      |
| 940661     | AE2-053      | 2.08      |
| 941011     | AE2-092 C    | 16.65     |
| 941791     | AE2-182 C    | 2.87      |
| 942451     | AE2-258      | 1.84      |
| 942461     | AE2-259 C O1 | 15.98     |
| 942711     | AE2-287 C O1 | 6.66      |
| 942751     | AE2-291 C O1 | 4.27      |
| 942761     | AE2-292 C O1 | 5.32      |
| 943051     | AE2-328 C    | 17.8      |
| AA2-074    | AA2-074      | 1.72      |
| CARR       | CARR         | 0.26      |
| CBM-S1     | CBM-S1       | 2.58      |
| CBM-S2     | CBM-S2       | 4.56      |
| CBM-W1     | CBM-W1       | 0.87      |
| CBM-W2     | CBM-W2       | 15.09     |
| CIN        | CIN          | 0.48      |
| CPL        | CPL          | 2.53      |
| IPL        | IPL          | 0.27      |
| LGEE       | LGEE         | 0.14      |
| MEC        | MEC          | 1.66      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.12      |

### 13.6.19 Index 19

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|----------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720531 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS | DVP         | 1      | DVP_P4-2:<br>238T2002 | breaker | 658.0      | 109.62                | 111.34                 | DC    | 25.14     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.44      |
| 314572 | 3EMPORIA     | 0.62      |
| 314578 | 3HORNRTN     | 3.69      |
| 314623 | 3WITAKRS     | 0.77      |
| 314704 | 3LAWRENC     | 0.3       |
| 315126 | 1ROARAP2     | 1.21      |
| 315131 | 1EDGECEMA    | 5.62      |
| 315132 | 1EDGECEMB    | 5.62      |
| 315136 | 1ROSEMG1     | 3.06      |
| 315137 | 1ROSEMS1     | 1.9       |
| 315138 | 1ROSEMG2     | 1.43      |
| 315139 | 1GASTONA     | 4.69      |
| 315141 | 1GASTONB     | 4.69      |
| 315150 | 1BUGGS 1     | 5.52      |
| 315151 | 1BUGGS 2     | 5.52      |
| 917342 | Z2-044 E     | 0.33      |
| 918492 | AA1-063AE OP | 2.18      |
| 919692 | AA2-053 E    | 3.13      |
| 919701 | AA2-057 C    | 4.15      |
| 919702 | AA2-057 E    | 2.08      |
| 920592 | AA2-165 E    | 0.27      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 3.1       |
| 923912 | AB2-031 E O1 | 1.53      |
| 923991 | AB2-040 C O1 | 1.24      |
| 923992 | AB2-040 E O1 | 8.34      |
| 924022 | AB2-043 E O1 | 2.74      |
| 924152 | AB2-059 E O1 | 3.09      |
| 924162 | AB2-060 E O1 | 2.23      |
| 924302 | AB2-077 E O1 | 0.7       |
| 924312 | AB2-078 E O1 | 0.7       |
| 924322 | AB2-079 E O1 | 0.7       |
| 924401 | AB2-089 C    | 1.54      |
| 924402 | AB2-089 E    | 0.79      |
| 924511 | AB2-100 C    | 21.43     |
| 924512 | AB2-100 E    | 10.55     |
| 925171 | AB2-174 C O1 | 10.03     |
| 925172 | AB2-174 E O1 | 9.07      |
| 925591 | AC1-034 C    | 3.88      |
| 925592 | AC1-034 E    | 2.93      |
| 925612 | AC1-036 E    | 0.36      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925781 | AC1-054 C O1 | 5.58      |
| 925782 | AC1-054 E O1 | 2.57      |
| 926071 | AC1-086 C    | 43.25     |
| 926072 | AC1-086 E    | 19.69     |
| 926201 | AC1-098 C    | 2.47      |
| 926202 | AC1-098 E    | 1.47      |
| 926211 | AC1-099 C    | 0.83      |
| 926212 | AC1-099 E    | 0.49      |
| 927141 | AC1-208 C    | 6.05      |
| 927142 | AC1-208 E    | 2.68      |
| 930402 | AB1-081 E O1 | 2.18      |
| 930861 | AB1-132 C O1 | 3.58      |
| 930862 | AB1-132 E O1 | 12.59     |
| 931231 | AB1-173 C    | 0.38      |
| 931232 | AB1-173 E    | 1.46      |
| 931241 | AB1-173AC    | 0.38      |
| 931242 | AB1-173AE    | 1.46      |
| 932631 | AC2-084 C    | 3.52      |
| 932632 | AC2-084 E    | 1.73      |
| 934201 | AD1-047 C    | 11.12     |
| 934202 | AD1-047 E    | 7.42      |
| 934231 | AD1-050 C    | 3.39      |
| 934232 | AD1-050 E    | 1.85      |
| 934331 | AD1-057 C O1 | 12.72     |
| 934332 | AD1-057 E O1 | 6.78      |
| 936261 | AD2-033 C    | 5.68      |
| 936262 | AD2-033 E    | 3.79      |
| 936361 | AD2-046 C O1 | 5.42      |
| 936362 | AD2-046 E O1 | 2.49      |
| 936481 | AD2-063 C O1 | 7.29      |
| 936482 | AD2-063 E O1 | 4.86      |
| 937571 | AD2-169 C    | 13.44     |
| 937572 | AD2-169 E    | 8.96      |
| 938174 | AE1-026 CBAT | 1.52      |
| 938175 | AE1-026 EBAT | 6.09      |
| 938661 | AE1-088      | 0.92      |
| 939071 | AE1-135 C O1 | 37.93     |
| 939072 | AE1-135 E O1 | 25.29     |
| 939181 | AE1-148 C O1 | 5.3       |
| 939182 | AE1-148 E O1 | 3.54      |
| 940241 | AE2-006      | 0.2       |
| 940481 | AE2-033 C    | 28.13     |
| 940482 | AE2-033 E    | 18.97     |
| 940571 | AE2-044 C    | 2.54      |
| 940572 | AE2-044 E    | 1.09      |
| 940661 | AE2-053      | 1.97      |
| 941951 | AE2-207      | 1.64      |
| 942451 | AE2-258      | 1.25      |
| 942471 | AE2-260 C O1 | 26.14     |
| 942472 | AE2-260 E O1 | 37.08     |
| 942711 | AE2-287 C O1 | 15.08     |
| 942712 | AE2-287 E O1 | 10.05     |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CARR</b>       | CARR       | 0.09             |
| <b>CBM-S1</b>     | CBM-S1     | 1.67             |
| <b>CBM-S2</b>     | CBM-S2     | 1.86             |
| <b>CBM-W1</b>     | CBM-W1     | 1.67             |
| <b>CBM-W2</b>     | CBM-W2     | 10.82            |
| <b>CIN</b>        | CIN        | 0.76             |
| <b>CPLE</b>       | CPLE       | 0.93             |
| <b>G-007</b>      | G-007      | 0.31             |
| <b>IPL</b>        | IPL        | 0.48             |
| <b>LGEE</b>       | LGEE       | 0.22             |
| <b>MEC</b>        | MEC        | 1.69             |
| <b>MECS</b>       | MECS       | 0.7              |
| <b>O-066</b>      | O-066      | 1.97             |
| <b>RENSSELAER</b> | RENSSELAER | 0.07             |
| <b>WEC</b>        | WEC        | 0.2              |

## 13.6.20 Index 20

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090926 | 314282    | 6CARSON  | DVP           | 314285  | 6CHRL249 | DVP         | 1      | DVP_P1-2: LN 563 | single | 559.3      | 120.62                | 121.75                 | DC    | 8.14      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.03      |
| 314704 | 3LAWRENC     | 0.16      |
| 315102 | 1BRUNSWICKG1 | 2.54      |
| 315103 | 1BRUNSWICKG2 | 2.54      |
| 315104 | 1BRUNSWICKG3 | 2.54      |
| 315105 | 1BRUNSWICKS1 | 5.29      |
| 315126 | 1ROARAP2     | 0.56      |
| 315128 | 1ROARAP4     | 0.54      |
| 315131 | 1EDGECEMA    | 4.32      |
| 315132 | 1EDGECEMB    | 4.32      |
| 315136 | 1ROSEMG1     | 0.99      |
| 315137 | 1ROSEMS1     | 0.62      |
| 315138 | 1ROSEMG2     | 0.47      |
| 315139 | 1GASTONA     | 1.44      |
| 315141 | 1GASTONB     | 1.44      |
| 315150 | 1BUGGS 1     | 4.46      |
| 315151 | 1BUGGS 2     | 4.46      |
| 315159 | 1KERR 2      | 0.45      |
| 315161 | 1KERR 4      | 0.44      |
| 315162 | 1KERR 5      | 0.44      |
| 315163 | 1KERR 6      | 0.44      |
| 315164 | 1KERR 7      | 0.44      |
| 916301 | Z1-086 C     | 15.49     |
| 917331 | Z2-043 C     | 0.13      |
| 917341 | Z2-044 C     | 0.08      |
| 918491 | AA1-063AC OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 0.56      |
| 919701 | AA2-057 C    | 3.39      |
| 920591 | AA2-165 C    | 0.06      |
| 920671 | AA2-174 C    | 0.03      |
| 923851 | AB2-025 C    | 0.33      |
| 923911 | AB2-031 C O1 | 1.5       |
| 923991 | AB2-040 C O1 | 0.6       |
| 924151 | AB2-059 C O1 | 0.59      |
| 924401 | AB2-089 C    | 0.96      |
| 924491 | AB2-098 C    | 0.23      |
| 924501 | AB2-099 C    | 0.25      |
| 924511 | AB2-100 C    | 10.06     |
| 925171 | AB2-174 C O1 | 4.9       |
| 925591 | AC1-034 C    | 3.16      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925781 | AC1-054 C O1 | 3.33      |
| 926071 | AC1-086 C    | 13.29     |
| 926201 | AC1-098 C    | 2.93      |
| 926211 | AC1-099 C    | 0.98      |
| 927021 | AC1-189 C    | 3.64      |
| 927141 | AC1-208 C    | 4.48      |
| 930401 | AB1-081 C O1 | 0.5       |
| 930861 | AB1-132 C O1 | 1.1       |
| 931231 | AB1-173 C    | 0.18      |
| 931241 | AB1-173AC    | 0.18      |
| 932631 | AC2-084 C    | 4.18      |
| 933991 | AD1-023 C    | 4.74      |
| 934201 | AD1-047 C    | 5.39      |
| 934231 | AD1-050 C    | 2.12      |
| 934331 | AD1-057 C O1 | 5.45      |
| 934521 | AD1-076 C    | 18.8      |
| 934611 | AD1-087 C O1 | 2.89      |
| 935171 | AD1-152 C O1 | 2.87      |
| 935211 | AD1-156 C    | 0.11      |
| 936361 | AD2-046 C O1 | 3.75      |
| 936401 | AD2-051 C O1 | 3.75      |
| 936481 | AD2-063 C O1 | 5.54      |
| 936531 | AD2-068 C    | 2.08      |
| 936701 | AD2-089 C    | 3.22      |
| 936711 | AD2-090 C O1 | 2.62      |
| 937481 | AD2-202 C O1 | 0.79      |
| 937571 | AD2-169 C    | 6.45      |
| 938171 | AE1-026 C1 O | 10.34     |
| 938172 | AE1-026 C2 O | 1.5       |
| 938221 | AE1-035 C    | 0.91      |
| 938491 | AE1-068 C O1 | 25.35     |
| 938501 | AE1-069 C O1 | 19.84     |
| 938661 | AE1-088      | 0.66      |
| 939071 | AE1-135 C O1 | 18.66     |
| 939181 | AE1-148 C O1 | 3.69      |
| 939411 | AE1-173 C    | 31.68     |
| 940471 | AE2-031 C O1 | 10.27     |
| 940481 | AE2-033 C    | 17.11     |
| 940521 | AE2-037 C O1 | 3.48      |
| 940541 | AE2-040      | 3.52      |
| 940571 | AE2-044 C    | 2.07      |
| 940641 | AE2-051 C O1 | 6.79      |
| 940661 | AE2-053      | 1.37      |
| 941031 | AE2-094 C    | 16.59     |
| 941541 | AE2-151 C    | 0.46      |
| 941951 | AE2-207      | 1.34      |
| 942211 | AE2-233 C    | 5.42      |
| 942451 | AE2-258      | 0.92      |
| 942471 | AE2-260 C O1 | 12.86     |
| 942711 | AE2-287 C O1 | 8.14      |
| 942921 | AE2-311 C O1 | 15.91     |
| 942931 | AE2-313 C    | 14.91     |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>943171</b>     | AE2-346 C  | 0.75             |
| <b>AA2-074</b>    | AA2-074    | 2.19             |
| <b>CARR</b>       | CARR       | 0.26             |
| <b>CBM-S1</b>     | CBM-S1     | 5.47             |
| <b>CBM-S2</b>     | CBM-S2     | 6.25             |
| <b>CBM-W1</b>     | CBM-W1     | 5.42             |
| <b>CBM-W2</b>     | CBM-W2     | 35.58            |
| <b>CIN</b>        | CIN        | 2.46             |
| <b>CPL</b>        | CPL        | 3.23             |
| <b>IPL</b>        | IPL        | 1.54             |
| <b>LGEE</b>       | LGEE       | 0.71             |
| <b>MEC</b>        | MEC        | 5.48             |
| <b>MECS</b>       | MECS       | 2.25             |
| <b>RENSSELAER</b> | RENSSELAER | 0.21             |
| <b>WEC</b>        | WEC        | 0.66             |

### 13.6.21 Index 21

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091007 | 314285    | 6CHRL249 | DVP           | 314316  | 6LOCKS | DVP         | 1      | DVP_P1-2: LN 563 | single | 559.3      | 116.95                | 118.09                 | DC    | 8.14      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.03      |
| 314704 | 3LAWRENC     | 0.16      |
| 315102 | 1BRUNSWICKG1 | 2.54      |
| 315103 | 1BRUNSWICKG2 | 2.54      |
| 315104 | 1BRUNSWICKG3 | 2.54      |
| 315105 | 1BRUNSWICKS1 | 5.29      |
| 315126 | 1ROARAP2     | 0.56      |
| 315128 | 1ROARAP4     | 0.54      |
| 315131 | 1EDGECEMA    | 4.32      |
| 315132 | 1EDGECEMB    | 4.32      |
| 315136 | 1ROSEMG1     | 0.99      |
| 315137 | 1ROSEMS1     | 0.62      |
| 315138 | 1ROSEMG2     | 0.47      |
| 315139 | 1GASTONA     | 1.44      |
| 315141 | 1GASTONB     | 1.44      |
| 315150 | 1BUGGS 1     | 4.46      |
| 315151 | 1BUGGS 2     | 4.46      |
| 315159 | 1KERR 2      | 0.45      |
| 315161 | 1KERR 4      | 0.44      |
| 315162 | 1KERR 5      | 0.44      |
| 315163 | 1KERR 6      | 0.44      |
| 315164 | 1KERR 7      | 0.44      |
| 916301 | Z1-086 C     | 15.49     |
| 917331 | Z2-043 C     | 0.13      |
| 917341 | Z2-044 C     | 0.08      |
| 918491 | AA1-063AC OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 0.56      |
| 919701 | AA2-057 C    | 3.39      |
| 920591 | AA2-165 C    | 0.06      |
| 920671 | AA2-174 C    | 0.03      |
| 923851 | AB2-025 C    | 0.33      |
| 923911 | AB2-031 C O1 | 1.5       |
| 923991 | AB2-040 C O1 | 0.6       |
| 924151 | AB2-059 C O1 | 0.59      |
| 924401 | AB2-089 C    | 0.96      |
| 924491 | AB2-098 C    | 0.23      |
| 924501 | AB2-099 C    | 0.25      |
| 924511 | AB2-100 C    | 10.06     |
| 925171 | AB2-174 C O1 | 4.9       |
| 925591 | AC1-034 C    | 3.16      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925781 | AC1-054 C O1 | 3.33      |
| 926071 | AC1-086 C    | 13.29     |
| 926201 | AC1-098 C    | 2.93      |
| 926211 | AC1-099 C    | 0.98      |
| 927021 | AC1-189 C    | 3.64      |
| 927141 | AC1-208 C    | 4.48      |
| 930401 | AB1-081 C O1 | 0.5       |
| 930861 | AB1-132 C O1 | 1.1       |
| 931231 | AB1-173 C    | 0.18      |
| 931241 | AB1-173AC    | 0.18      |
| 932631 | AC2-084 C    | 4.18      |
| 933991 | AD1-023 C    | 4.74      |
| 934201 | AD1-047 C    | 5.39      |
| 934231 | AD1-050 C    | 2.12      |
| 934331 | AD1-057 C O1 | 5.45      |
| 934521 | AD1-076 C    | 18.8      |
| 934611 | AD1-087 C O1 | 2.89      |
| 935171 | AD1-152 C O1 | 2.87      |
| 935211 | AD1-156 C    | 0.11      |
| 936361 | AD2-046 C O1 | 3.75      |
| 936401 | AD2-051 C O1 | 3.75      |
| 936481 | AD2-063 C O1 | 5.54      |
| 936531 | AD2-068 C    | 2.08      |
| 936701 | AD2-089 C    | 3.22      |
| 936711 | AD2-090 C O1 | 2.62      |
| 937481 | AD2-202 C O1 | 0.79      |
| 937571 | AD2-169 C    | 6.45      |
| 938171 | AE1-026 C1 O | 10.34     |
| 938172 | AE1-026 C2 O | 1.5       |
| 938221 | AE1-035 C    | 0.91      |
| 938491 | AE1-068 C O1 | 25.35     |
| 938501 | AE1-069 C O1 | 19.84     |
| 938661 | AE1-088      | 0.66      |
| 939071 | AE1-135 C O1 | 18.66     |
| 939181 | AE1-148 C O1 | 3.69      |
| 939411 | AE1-173 C    | 31.68     |
| 940471 | AE2-031 C O1 | 10.27     |
| 940481 | AE2-033 C    | 17.11     |
| 940521 | AE2-037 C O1 | 3.48      |
| 940541 | AE2-040      | 3.52      |
| 940571 | AE2-044 C    | 2.07      |
| 940641 | AE2-051 C O1 | 6.79      |
| 940661 | AE2-053      | 1.37      |
| 941031 | AE2-094 C    | 16.59     |
| 941541 | AE2-151 C    | 0.46      |
| 941951 | AE2-207      | 1.34      |
| 942211 | AE2-233 C    | 5.42      |
| 942451 | AE2-258      | 0.92      |
| 942471 | AE2-260 C O1 | 12.86     |
| 942711 | AE2-287 C O1 | 8.14      |
| 942921 | AE2-311 C O1 | 15.91     |
| 942931 | AE2-313 C    | 14.91     |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>943171</b>     | AE2-346 C  | 0.75             |
| <b>AA2-074</b>    | AA2-074    | 2.19             |
| <b>CARR</b>       | CARR       | 0.26             |
| <b>CBM-S1</b>     | CBM-S1     | 5.47             |
| <b>CBM-S2</b>     | CBM-S2     | 6.25             |
| <b>CBM-W1</b>     | CBM-W1     | 5.42             |
| <b>CBM-W2</b>     | CBM-W2     | 35.58            |
| <b>CIN</b>        | CIN        | 2.46             |
| <b>CPL</b>        | CPL        | 3.23             |
| <b>IPL</b>        | IPL        | 1.54             |
| <b>LGEE</b>       | LGEE       | 0.71             |
| <b>MEC</b>        | MEC        | 5.48             |
| <b>MECS</b>       | MECS       | 2.25             |
| <b>RENSSELAER</b> | RENSSELAER | 0.21             |
| <b>WEC</b>        | WEC        | 0.66             |

### 13.6.22 Index 22

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090289 | 314287    | 6CHESTFB | DVP           | 314276  | 6BASIN | DVP         | 1      | DVP_P1-2: LN 563 | single | 449.32     | 159.79                | 160.34                 | DC    | 5.38      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314314 | 3LOCKS       | 0.14      |
| 314704 | 3LAWRENC     | 0.11      |
| 315065 | 1CHESTF6     | 20.96     |
| 315074 | 1HOPCGN1     | 6.04      |
| 315075 | 1HOPCGN2     | 5.96      |
| 315076 | 1HOPPOLC     | 0.84      |
| 315077 | 1HOPHCF1     | 1.32      |
| 315078 | 1HOPHCF2     | 1.32      |
| 315079 | 1HOPHCF3     | 1.32      |
| 315080 | 1HOPHCF4     | 2.0       |
| 315116 | 1SURRY 1     | 8.12      |
| 315117 | 1GRAVELC     | 0.28      |
| 315119 | 1GRAVEL3     | 0.82      |
| 315120 | 1GRAVEL4     | 0.84      |
| 315121 | 1GRAVEL5     | 0.82      |
| 315122 | 1GRAVEL6     | 0.83      |
| 315136 | 1ROSEMG1     | 0.71      |
| 315137 | 1ROSEMS1     | 0.44      |
| 315138 | 1ROSEMG2     | 0.33      |
| 315139 | 1GASTONA     | 1.02      |
| 315141 | 1GASTONB     | 1.02      |
| 923801 | AB2-015 C O1 | 3.37      |
| 923851 | AB2-025 C    | 0.2       |
| 923911 | AB2-031 C O1 | 1.04      |
| 923991 | AB2-040 C O1 | 0.42      |
| 924501 | AB2-099 C    | 0.22      |
| 924511 | AB2-100 C    | 6.44      |
| 924811 | AB2-134 C O1 | 0.88      |
| 925051 | AB2-160 C O1 | 3.5       |
| 925061 | AB2-161 C O1 | 1.96      |
| 925171 | AB2-174 C O1 | 3.33      |
| 925331 | AB2-190 C    | 11.72     |
| 925821 | AC1-061      | 0.0       |
| 926071 | AC1-086 C    | 9.45      |
| 926201 | AC1-098 C    | 2.35      |
| 926211 | AC1-099 C    | 0.79      |
| 927141 | AC1-208 C    | 3.49      |
| 927221 | AC1-216 C O1 | 5.52      |
| 930861 | AB1-132 C O1 | 0.78      |
| 931231 | AB1-173 C    | 0.13      |
| 931241 | AB1-173AC    | 0.13      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 932581  | AC2-078 C O1 | 2.99      |
| 932591  | AC2-079 C O1 | 2.78      |
| 932631  | AC2-084 C    | 3.36      |
| 934011  | AD1-025 C    | 9.49      |
| 934201  | AD1-047 C    | 3.72      |
| 934331  | AD1-057 C O1 | 4.03      |
| 934571  | AD1-082 C    | 4.47      |
| 935161  | AD1-151 C O1 | 9.42      |
| 935211  | AD1-156 C    | 0.25      |
| 936041  | AD2-007      | 1.01      |
| 936051  | AD2-008 C    | 1.65      |
| 936401  | AD2-051 C O1 | 3.33      |
| 936661  | AD2-085 C    | 1.69      |
| 936711  | AD2-090 C O1 | 2.83      |
| 937571  | AD2-169 C    | 4.53      |
| 938221  | AE1-035 C    | 0.84      |
| 938491  | AE1-068 C O1 | 20.11     |
| 938501  | AE1-069 C O1 | 15.73     |
| 938631  | AE1-085 C O1 | 7.83      |
| 938771  | AE1-103 C O1 | 1.42      |
| 939071  | AE1-135 C O1 | 11.84     |
| 939191  | AE1-149 C O1 | 8.22      |
| 939311  | AE1-162 C    | 0.86      |
| 939411  | AE1-173 C    | 29.65     |
| 940061  | AE1-248 C O1 | 9.3       |
| 940071  | AE1-249 C    | 4.62      |
| 940481  | AE2-033 C    | 10.34     |
| 940521  | AE2-037 C O1 | 3.06      |
| 940541  | AE2-040      | 2.11      |
| 940641  | AE2-051 C O1 | 5.69      |
| 940651  | AE2-052      | 2.75      |
| 940891  | AE2-078 C    | 0.97      |
| 940901  | AE2-079 C    | 0.97      |
| 940911  | AE2-080 C    | 0.97      |
| 941031  | AE2-094 C    | 13.19     |
| 941101  | AE2-104 C O1 | 1.33      |
| 941541  | AE2-151 C    | 0.41      |
| 941601  | AE2-157 C O1 | 6.75      |
| 942001  | AE2-212 C    | 2.53      |
| 942151  | AE2-227 C O1 | 2.53      |
| 942161  | AE2-228 C O1 | 2.53      |
| 942211  | AE2-233 C    | 4.31      |
| 942341  | AE2-247 C    | 0.73      |
| 942371  | AE2-250 C O1 | 6.22      |
| 942471  | AE2-260 C O1 | 8.16      |
| 942551  | AE2-270      | 15.71     |
| 942711  | AE2-287 C O1 | 5.38      |
| 942931  | AE2-313 C    | 11.81     |
| 943171  | AE2-346 C    | 0.67      |
| AA2-074 | AA2-074      | 1.68      |
| CARR    | CARR         | 0.32      |
| CBM-S1  | CBM-S1       | 3.53      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-S2</b>     | CBM-S2     | 4.67             |
| <b>CBM-W1</b>     | CBM-W1     | 2.7              |
| <b>CBM-W2</b>     | CBM-W2     | 22.14            |
| <b>CIN</b>        | CIN        | 1.28             |
| <b>CPL</b>        | CPL        | 2.47             |
| <b>IPL</b>        | IPL        | 0.79             |
| <b>LGEE</b>       | LGEE       | 0.37             |
| <b>MEC</b>        | MEC        | 3.11             |
| <b>MECS</b>       | MECS       | 0.79             |
| <b>RENSSELAER</b> | RENSSELAER | 0.26             |
| <b>WEC</b>        | WEC        | 0.34             |

### 13.6.23 Index 23

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS  | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|---------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720267 | 314435    | 6SAPONY  | DVP           | 314282  | 6CARSON | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 830.0      | 133.82                | 138.96                 | DC    | 50.43     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.24      |
| 314578 | 3HORNRTN     | 3.01      |
| 314704 | 3LAWRENC     | 0.62      |
| 315126 | 1ROARAP2     | 0.97      |
| 315139 | 1GASTONA     | 10.52     |
| 315141 | 1GASTONB     | 10.52     |
| 918492 | AA1-063AE OP | 2.96      |
| 919692 | AA2-053 E    | 3.15      |
| 920672 | AA2-174 E    | 0.36      |
| 923851 | AB2-025 C    | 1.48      |
| 923852 | AB2-025 E    | 5.44      |
| 923911 | AB2-031 C O1 | 5.04      |
| 923912 | AB2-031 E O1 | 2.48      |
| 923991 | AB2-040 C O1 | 2.02      |
| 923992 | AB2-040 E O1 | 13.53     |
| 924022 | AB2-043 E O1 | 4.05      |
| 924162 | AB2-060 E O1 | 3.3       |
| 924302 | AB2-077 E O1 | 1.02      |
| 924312 | AB2-078 E O1 | 1.02      |
| 924322 | AB2-079 E O1 | 1.02      |
| 924511 | AB2-100 C    | 52.6      |
| 924512 | AB2-100 E    | 25.91     |
| 925171 | AB2-174 C O1 | 17.73     |
| 925172 | AB2-174 E O1 | 16.04     |
| 925781 | AC1-054 C O1 | 5.59      |
| 925782 | AC1-054 E O1 | 2.58      |
| 926071 | AC1-086 C    | 97.11     |
| 926072 | AC1-086 E    | 44.2      |
| 930861 | AB1-132 C O1 | 8.04      |
| 930862 | AB1-132 E O1 | 28.26     |
| 931231 | AB1-173 C    | 0.62      |
| 931232 | AB1-173 E    | 2.37      |
| 931241 | AB1-173AC    | 0.62      |
| 931242 | AB1-173AE    | 2.37      |
| 934201 | AD1-047 C    | 18.04     |
| 934202 | AD1-047 E    | 12.03     |
| 937571 | AD2-169 C    | 19.53     |
| 937572 | AD2-169 E    | 13.02     |
| 939071 | AE1-135 C O1 | 94.2      |
| 939072 | AE1-135 E O1 | 62.8      |
| 940481 | AE2-033 C    | 76.88     |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>940482</b>     | AE2-033 E    | 51.83            |
| <b>940541</b>     | AE2-040      | 15.57            |
| <b>942451</b>     | AE2-258      | 1.84             |
| <b>942471</b>     | AE2-260 C O1 | 64.92            |
| <b>942472</b>     | AE2-260 E O1 | 92.08            |
| <b>942711</b>     | AE2-287 C O1 | 30.26            |
| <b>942712</b>     | AE2-287 E O1 | 20.17            |
| <b>CARR</b>       | CARR         | 0.13             |
| <b>CBM-S1</b>     | CBM-S1       | 1.39             |
| <b>CBM-S2</b>     | CBM-S2       | 1.82             |
| <b>CBM-W1</b>     | CBM-W1       | 1.12             |
| <b>CBM-W2</b>     | CBM-W2       | 8.8              |
| <b>CIN</b>        | CIN          | 0.53             |
| <b>CPL</b>        | CPL          | 1.02             |
| <b>G-007</b>      | G-007        | 0.44             |
| <b>IPL</b>        | IPL          | 0.33             |
| <b>LGEE</b>       | LGEE         | 0.16             |
| <b>MEC</b>        | MEC          | 1.26             |
| <b>MECS</b>       | MECS         | 0.35             |
| <b>O-066</b>      | O-066        | 2.77             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.11             |
| <b>WEC</b>        | WEC          | 0.14             |

### 13.6.24 Index 24

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720548 | 314561    | 6CAROLNA | DVP           | 314599  | 6ROA VAL | DVP         | 1      | DVP_P4-2: 23872 | breaker | 671.0      | 108.39                | 110.08                 | DC    | 25.15     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.45      |
| 314572 | 3EMPORIA     | 0.63      |
| 314578 | 3HORNRTN     | 3.69      |
| 314623 | 3WITAKRS     | 0.77      |
| 314704 | 3LAWRENC     | 0.3       |
| 315126 | 1ROARAP2     | 1.21      |
| 315131 | 1EDGECEMA    | 5.63      |
| 315132 | 1EDGECEMB    | 5.63      |
| 315136 | 1ROSEMG1     | 3.06      |
| 315137 | 1ROSEMS1     | 1.9       |
| 315138 | 1ROSEMG2     | 1.43      |
| 315139 | 1GASTONA     | 4.69      |
| 315141 | 1GASTONB     | 4.69      |
| 315150 | 1BUGGS 1     | 5.53      |
| 315151 | 1BUGGS 2     | 5.53      |
| 917342 | Z2-044 E     | 0.33      |
| 918492 | AA1-063AE OP | 2.19      |
| 919692 | AA2-053 E    | 3.14      |
| 919701 | AA2-057 C    | 4.16      |
| 919702 | AA2-057 E    | 2.08      |
| 920592 | AA2-165 E    | 0.27      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 3.11      |
| 923912 | AB2-031 E O1 | 1.53      |
| 923991 | AB2-040 C O1 | 1.24      |
| 923992 | AB2-040 E O1 | 8.35      |
| 924022 | AB2-043 E O1 | 2.74      |
| 924152 | AB2-059 E O1 | 3.09      |
| 924162 | AB2-060 E O1 | 2.23      |
| 924302 | AB2-077 E O1 | 0.7       |
| 924312 | AB2-078 E O1 | 0.7       |
| 924322 | AB2-079 E O1 | 0.7       |
| 924401 | AB2-089 C    | 1.54      |
| 924402 | AB2-089 E    | 0.79      |
| 924511 | AB2-100 C    | 21.44     |
| 924512 | AB2-100 E    | 10.56     |
| 925171 | AB2-174 C O1 | 10.03     |
| 925172 | AB2-174 E O1 | 9.08      |
| 925591 | AC1-034 C    | 3.88      |
| 925592 | AC1-034 E    | 2.93      |
| 925612 | AC1-036 E    | 0.36      |
| 925781 | AC1-054 C O1 | 5.59      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925782 | AC1-054 E O1 | 2.57      |
| 926071 | AC1-086 C    | 43.26     |
| 926072 | AC1-086 E    | 19.69     |
| 926201 | AC1-098 C    | 2.47      |
| 926202 | AC1-098 E    | 1.47      |
| 926211 | AC1-099 C    | 0.83      |
| 926212 | AC1-099 E    | 0.49      |
| 927141 | AC1-208 C    | 6.05      |
| 927142 | AC1-208 E    | 2.69      |
| 930402 | AB1-081 E O1 | 2.18      |
| 930861 | AB1-132 C O1 | 3.58      |
| 930862 | AB1-132 E O1 | 12.59     |
| 931231 | AB1-173 C    | 0.38      |
| 931232 | AB1-173 E    | 1.46      |
| 931241 | AB1-173AC    | 0.38      |
| 931242 | AB1-173AE    | 1.46      |
| 932631 | AC2-084 C    | 3.52      |
| 932632 | AC2-084 E    | 1.74      |
| 934201 | AD1-047 C    | 11.13     |
| 934202 | AD1-047 E    | 7.42      |
| 934231 | AD1-050 C    | 3.39      |
| 934232 | AD1-050 E    | 1.85      |
| 934331 | AD1-057 C O1 | 12.73     |
| 934332 | AD1-057 E O1 | 6.79      |
| 936261 | AD2-033 C    | 5.69      |
| 936262 | AD2-033 E    | 3.79      |
| 936361 | AD2-046 C O1 | 5.42      |
| 936362 | AD2-046 E O1 | 2.49      |
| 936481 | AD2-063 C O1 | 7.3       |
| 936482 | AD2-063 E O1 | 4.87      |
| 937571 | AD2-169 C    | 13.45     |
| 937572 | AD2-169 E    | 8.97      |
| 938174 | AE1-026 CBAT | 1.52      |
| 938175 | AE1-026 EBAT | 6.08      |
| 938661 | AE1-088      | 0.92      |
| 939071 | AE1-135 C O1 | 37.95     |
| 939072 | AE1-135 E O1 | 25.3      |
| 939181 | AE1-148 C O1 | 5.31      |
| 939182 | AE1-148 E O1 | 3.54      |
| 940241 | AE2-006      | 0.2       |
| 940481 | AE2-033 C    | 28.14     |
| 940482 | AE2-033 E    | 18.97     |
| 940571 | AE2-044 C    | 2.54      |
| 940572 | AE2-044 E    | 1.09      |
| 940661 | AE2-053      | 1.98      |
| 941951 | AE2-207      | 1.64      |
| 942451 | AE2-258      | 1.25      |
| 942471 | AE2-260 C O1 | 26.15     |
| 942472 | AE2-260 E O1 | 37.09     |
| 942711 | AE2-287 C O1 | 15.09     |
| 942712 | AE2-287 E O1 | 10.06     |
| CARR   | CARR         | 0.09      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-S1</b>     | CBM-S1     | 1.68             |
| <b>CBM-S2</b>     | CBM-S2     | 1.87             |
| <b>CBM-W1</b>     | CBM-W1     | 1.69             |
| <b>CBM-W2</b>     | CBM-W2     | 10.92            |
| <b>CIN</b>        | CIN        | 0.77             |
| <b>CPL</b>        | CPL        | 0.94             |
| <b>G-007</b>      | G-007      | 0.31             |
| <b>IPL</b>        | IPL        | 0.48             |
| <b>LGEE</b>       | LGEE       | 0.22             |
| <b>MEC</b>        | MEC        | 1.7              |
| <b>MECS</b>       | MECS       | 0.7              |
| <b>O-066</b>      | O-066      | 1.98             |
| <b>RENSSELAER</b> | RENSSELAER | 0.07             |
| <b>WEC</b>        | WEC        | 0.2              |

### 13.6.25 Index 25

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720045 | 314563    | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 637.0      | 163.0                 | 170.88                 | DC    | 50.45     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.24      |
| 314578 | 3HORNRTN     | 3.01      |
| 314704 | 3LAWRENC     | 0.62      |
| 315126 | 1ROARAP2     | 0.97      |
| 315128 | 1ROARAP4     | 0.94      |
| 315139 | 1GASTONA     | 10.52     |
| 315141 | 1GASTONB     | 10.52     |
| 918491 | AA1-063AC OP | 0.77      |
| 918492 | AA1-063AE OP | 2.96      |
| 919691 | AA2-053 C    | 0.9       |
| 919692 | AA2-053 E    | 3.15      |
| 920671 | AA2-174 C    | 0.04      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 5.04      |
| 923912 | AB2-031 E O1 | 2.48      |
| 923991 | AB2-040 C O1 | 2.02      |
| 923992 | AB2-040 E O1 | 13.53     |
| 924021 | AB2-043 C O1 | 0.3       |
| 924022 | AB2-043 E O1 | 4.06      |
| 924161 | AB2-060 C O1 | 0.86      |
| 924162 | AB2-060 E O1 | 3.3       |
| 924301 | AB2-077 C O1 | 0.19      |
| 924302 | AB2-077 E O1 | 1.02      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924312 | AB2-078 E O1 | 1.02      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924322 | AB2-079 E O1 | 1.02      |
| 924401 | AB2-089 C    | 1.6       |
| 924402 | AB2-089 E    | 0.83      |
| 924511 | AB2-100 C    | 52.6      |
| 924512 | AB2-100 E    | 25.91     |
| 925171 | AB2-174 C O1 | 17.74     |
| 925172 | AB2-174 E O1 | 16.05     |
| 925781 | AC1-054 C O1 | 5.59      |
| 925782 | AC1-054 E O1 | 2.58      |
| 926071 | AC1-086 C    | 97.12     |
| 926072 | AC1-086 E    | 44.2      |
| 930861 | AB1-132 C O1 | 8.04      |
| 930862 | AB1-132 E O1 | 28.26     |
| 931231 | AB1-173 C    | 0.62      |
| 931232 | AB1-173 E    | 2.37      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.62      |
| 931242     | AB1-173AE    | 2.37      |
| 934201     | AD1-047 C    | 18.05     |
| 934202     | AD1-047 E    | 12.03     |
| 934231     | AD1-050 C    | 3.53      |
| 934232     | AD1-050 E    | 1.93      |
| 936261     | AD2-033 C    | 8.4       |
| 936262     | AD2-033 E    | 5.6       |
| 936361     | AD2-046 C O1 | 6.38      |
| 936362     | AD2-046 E O1 | 2.93      |
| 936481     | AD2-063 C O1 | 10.79     |
| 936482     | AD2-063 E O1 | 7.19      |
| 937571     | AD2-169 C    | 19.53     |
| 937572     | AD2-169 E    | 13.02     |
| 939071     | AE1-135 C O1 | 94.21     |
| 939072     | AE1-135 E O1 | 62.81     |
| 939181     | AE1-148 C O1 | 6.33      |
| 939182     | AE1-148 E O1 | 4.22      |
| 940542     | AE2-040 BAT  | 2.16      |
| 940661     | AE2-053      | 2.36      |
| 942451     | AE2-258      | 1.85      |
| 942471     | AE2-260 C O1 | 64.93     |
| 942472     | AE2-260 E O1 | 92.09     |
| 942711     | AE2-287 C O1 | 30.27     |
| 942712     | AE2-287 E O1 | 20.18     |
| CARR       | CARR         | 0.13      |
| CBM-S1     | CBM-S1       | 1.42      |
| CBM-S2     | CBM-S2       | 1.84      |
| CBM-W1     | CBM-W1       | 1.17      |
| CBM-W2     | CBM-W2       | 8.98      |
| CIN        | CIN          | 0.55      |
| CPL        | CPL          | 1.02      |
| G-007      | G-007        | 0.43      |
| IPL        | IPL          | 0.34      |
| LGEE       | LGEE         | 0.16      |
| MEC        | MEC          | 1.3       |
| MECS       | MECS         | 0.38      |
| O-066      | O-066        | 2.72      |
| RENSSELAER | RENSSELAER   | 0.1       |
| WEC        | WEC          | 0.15      |

### 13.6.26 Index 26

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720288 | 314563    | 6CLUBHSE | DVP           | 924510  | AB2-100 TAP | DVP         | 1      | DVP_P4-2:<br>238T2002 | breaker | 427.0      | 126.93                | 137.41                 | DC    | 44.74     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314572     | 3EMPORIA     | 1.1       |
| 314704     | 3LAWRENC     | 0.55      |
| 923911     | AB2-031 C O1 | 4.0       |
| 923912     | AB2-031 E O1 | 1.97      |
| 923991     | AB2-040 C O1 | 1.6       |
| 923992     | AB2-040 E O1 | 10.75     |
| 924022     | AB2-043 E O1 | 3.03      |
| 924162     | AB2-060 E O1 | 2.47      |
| 924302     | AB2-077 E O1 | 0.75      |
| 924312     | AB2-078 E O1 | 0.75      |
| 924322     | AB2-079 E O1 | 0.75      |
| 925171     | AB2-174 C O1 | 14.8      |
| 925172     | AB2-174 E O1 | 13.39     |
| 925612     | AC1-036 E    | 0.4       |
| 931231     | AB1-173 C    | 0.49      |
| 931232     | AB1-173 E    | 1.88      |
| 931241     | AB1-173AC    | 0.49      |
| 931242     | AB1-173AE    | 1.88      |
| 934201     | AD1-047 C    | 14.34     |
| 934202     | AD1-047 E    | 9.56      |
| 936261     | AD2-033 C    | 6.32      |
| 936262     | AD2-033 E    | 4.21      |
| 936481     | AD2-063 C O1 | 8.08      |
| 936482     | AD2-063 E O1 | 5.38      |
| 937571     | AD2-169 C    | 14.41     |
| 937572     | AD2-169 E    | 9.61      |
| 939071     | AE1-135 C O1 | 90.68     |
| 939072     | AE1-135 E O1 | 60.45     |
| 939181     | AE1-148 C O1 | 3.86      |
| 939182     | AE1-148 E O1 | 2.58      |
| 940241     | AE2-006      | 0.22      |
| 940481     | AE2-033 C    | 67.26     |
| 940482     | AE2-033 E    | 45.34     |
| 940661     | AE2-053      | 1.44      |
| 942451     | AE2-258      | 1.38      |
| 942471     | AE2-260 C O1 | 62.49     |
| 942472     | AE2-260 E O1 | 88.64     |
| 942711     | AE2-287 C O1 | 26.85     |
| 942712     | AE2-287 E O1 | 17.9      |
| BLUEG      | BLUEG        | 0.16      |
| CALDERWOOD | CALDERWOOD   | 0.06      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CANNELTON</b>  | CANNELTON  | 0.01             |
| <b>CARR</b>       | CARR       | 0.0              |
| <b>CATAWBA</b>    | CATAWBA    | 0.07             |
| <b>CHEOAH</b>     | CHEOAH     | 0.06             |
| <b>CHILHOWEE</b>  | CHILHOWEE  | 0.02             |
| <b>COFFEEN</b>    | COFFEEN    | 0.02             |
| <b>COTTONWOOD</b> | COTTONWOOD | 0.2              |
| <b>DUCKCREEK</b>  | DUCKCREEK  | 0.04             |
| <b>EDWARDS</b>    | EDWARDS    | 0.02             |
| <b>ELMERSMITH</b> | ELMERSMITH | 0.02             |
| <b>FARMERCITY</b> | FARMERCITY | 0.02             |
| <b>GIBSON</b>     | GIBSON     | 0.01             |
| <b>HAMLET</b>     | HAMLET     | 0.19             |
| <b>NEWTON</b>     | NEWTON     | 0.06             |
| <b>PRAIRIE</b>    | PRAIRIE    | 0.14             |
| <b>RENSSELAER</b> | RENSSELAER | 0.0              |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.02             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.01             |
| <b>TATANKA</b>    | TATANKA    | 0.03             |
| <b>TILTON</b>     | TILTON     | 0.02             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.02             |
| <b>TVA</b>        | TVA        | 0.16             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.09             |

### 13.6.27 Index 27

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090416 | 314569    | 6EARLEYS | DVP           | 314575  | 6NUCO TP | DVP         | 1      | DVP_P1-2: LN 2092 | single | 571.52     | 124.38                | 125.6                  | DC    | 7.0       |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.07      |
| 314704 | 3LAWRENC     | 0.14      |
| 315126 | 1ROARAP2     | 0.96      |
| 315128 | 1ROARAP4     | 0.92      |
| 315131 | 1EDGECEMA    | 9.42      |
| 315132 | 1EDGECEMB    | 9.42      |
| 315136 | 1ROSEMG1     | 1.68      |
| 315137 | 1ROSEMS1     | 1.04      |
| 315138 | 1ROSEMG2     | 0.79      |
| 315139 | 1GASTONA     | 2.37      |
| 315141 | 1GASTONB     | 2.37      |
| 315159 | 1KERR 2      | 0.53      |
| 315163 | 1KERR 6      | 0.52      |
| 315164 | 1KERR 7      | 0.52      |
| 315292 | 1DOMTR78     | 2.01      |
| 315293 | 1DOMTR9      | 1.64      |
| 315294 | 1DOMTR10     | 2.98      |
| 916041 | Z1-036 C     | 1.64      |
| 917331 | Z2-043 C     | 0.46      |
| 917341 | Z2-044 C     | 0.17      |
| 917511 | Z2-088 C OP1 | 1.67      |
| 918491 | AA1-063AC OP | 1.35      |
| 918511 | AA1-065 C OP | 2.38      |
| 918531 | AA1-067 C    | 0.36      |
| 918561 | AA1-072 C    | 0.07      |
| 919691 | AA2-053 C    | 1.22      |
| 919701 | AA2-057 C    | 7.67      |
| 920041 | AA2-088 C OP | 0.49      |
| 920591 | AA2-165 C    | 0.13      |
| 920671 | AA2-174 C    | 0.06      |
| 920691 | AA2-178 C    | 2.36      |
| 923911 | AB2-031 C O1 | 1.74      |
| 923991 | AB2-040 C O1 | 0.7       |
| 924151 | AB2-059 C O1 | 1.28      |
| 924401 | AB2-089 C    | 1.24      |
| 924491 | AB2-098 C    | 0.99      |
| 924501 | AB2-099 C    | 0.95      |
| 924511 | AB2-100 C    | 7.11      |
| 925121 | AB2-169 C    | 1.5       |
| 925171 | AB2-174 C O1 | 5.2       |
| 925591 | AC1-034 C    | 6.83      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925781     | AC1-054 C O1 | 4.49      |
| 926071     | AC1-086 C    | 21.84     |
| 926201     | AC1-098 C    | 7.82      |
| 926211     | AC1-099 C    | 2.62      |
| 927021     | AC1-189 C    | 13.69     |
| 927141     | AC1-208 C    | 10.08     |
| 930401     | AB1-081 C O1 | 1.09      |
| 930861     | AB1-132 C O1 | 1.81      |
| 931231     | AB1-173 C    | 0.21      |
| 931241     | AB1-173AC    | 0.21      |
| 932631     | AC2-084 C    | 11.14     |
| 933991     | AD1-023 C    | 27.21     |
| 934201     | AD1-047 C    | 6.24      |
| 934231     | AD1-050 C    | 2.73      |
| 934331     | AD1-057 C O1 | 10.32     |
| 934521     | AD1-076 C    | 110.71    |
| 936401     | AD2-051 C O1 | 15.91     |
| 936531     | AD2-068 C    | 6.55      |
| 936701     | AD2-089 C    | 9.29      |
| 937571     | AD2-169 C    | 8.2       |
| 938171     | AE1-026 C1 O | 58.56     |
| 938172     | AE1-026 C2 O | 8.47      |
| 938221     | AE1-035 C    | 4.88      |
| 938661     | AE1-088      | 6.3       |
| 939071     | AE1-135 C O1 | 11.68     |
| 940491     | AE2-034 C    | 16.91     |
| 940521     | AE2-037 C O1 | 14.19     |
| 940571     | AE2-044 C    | 4.47      |
| 941541     | AE2-151 C    | 1.97      |
| 941951     | AE2-207      | 2.89      |
| 942471     | AE2-260 C O1 | 8.05      |
| 942711     | AE2-287 C O1 | 7.0       |
| 943171     | AE2-346 C    | 2.85      |
| AA2-074    | AA2-074      | 2.73      |
| CARR       | CARR         | 0.19      |
| CBM-S1     | CBM-S1       | 5.98      |
| CBM-S2     | CBM-S2       | 7.05      |
| CBM-W1     | CBM-W1       | 6.2       |
| CBM-W2     | CBM-W2       | 39.24     |
| CIN        | CIN          | 2.78      |
| CPL        | CPL          | 4.02      |
| IPL        | IPL          | 1.74      |
| LGEE       | LGEE         | 0.8       |
| MEC        | MEC          | 6.14      |
| MECS       | MECS         | 2.71      |
| RENSSELAER | RENSSELAER   | 0.15      |
| WEC        | WEC          | 0.75      |

### 13.6.28 Index 28

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090469 | 314575    | 6NUCO TP | DVP           | 919140  | AA1-138 TAP | DVP         | 1      | DVP_P1-2: LN 2092 | single | 571.52     | 117.99                | 119.21                 | DC    | 7.0       |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.07      |
| 314704 | 3LAWRENC     | 0.14      |
| 315126 | 1ROARAP2     | 0.96      |
| 315128 | 1ROARAP4     | 0.92      |
| 315131 | 1EDGECEMA    | 9.42      |
| 315132 | 1EDGECEMB    | 9.42      |
| 315136 | 1ROSEMG1     | 1.68      |
| 315137 | 1ROSEMS1     | 1.04      |
| 315138 | 1ROSEMG2     | 0.79      |
| 315139 | 1GASTONA     | 2.37      |
| 315141 | 1GASTONB     | 2.37      |
| 315159 | 1KERR 2      | 0.53      |
| 315163 | 1KERR 6      | 0.52      |
| 315164 | 1KERR 7      | 0.52      |
| 315292 | 1DOMTR78     | 2.01      |
| 315293 | 1DOMTR9      | 1.64      |
| 315294 | 1DOMTR10     | 2.98      |
| 916041 | Z1-036 C     | 1.64      |
| 917331 | Z2-043 C     | 0.46      |
| 917341 | Z2-044 C     | 0.17      |
| 917511 | Z2-088 C OP1 | 1.67      |
| 918491 | AA1-063AC OP | 1.35      |
| 918511 | AA1-065 C OP | 2.38      |
| 918531 | AA1-067 C    | 0.36      |
| 918561 | AA1-072 C    | 0.07      |
| 919691 | AA2-053 C    | 1.22      |
| 919701 | AA2-057 C    | 7.67      |
| 920041 | AA2-088 C OP | 0.49      |
| 920591 | AA2-165 C    | 0.13      |
| 920671 | AA2-174 C    | 0.06      |
| 920691 | AA2-178 C    | 2.36      |
| 923911 | AB2-031 C O1 | 1.74      |
| 923991 | AB2-040 C O1 | 0.7       |
| 924151 | AB2-059 C O1 | 1.28      |
| 924401 | AB2-089 C    | 1.24      |
| 924491 | AB2-098 C    | 0.99      |
| 924501 | AB2-099 C    | 0.95      |
| 924511 | AB2-100 C    | 7.11      |
| 925121 | AB2-169 C    | 1.5       |
| 925171 | AB2-174 C O1 | 5.2       |
| 925591 | AC1-034 C    | 6.83      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925781     | AC1-054 C O1 | 4.49      |
| 926071     | AC1-086 C    | 21.84     |
| 926201     | AC1-098 C    | 7.82      |
| 926211     | AC1-099 C    | 2.62      |
| 927021     | AC1-189 C    | 13.69     |
| 927141     | AC1-208 C    | 10.08     |
| 930401     | AB1-081 C O1 | 1.09      |
| 930861     | AB1-132 C O1 | 1.81      |
| 931231     | AB1-173 C    | 0.21      |
| 931241     | AB1-173AC    | 0.21      |
| 932631     | AC2-084 C    | 11.14     |
| 933991     | AD1-023 C    | 27.21     |
| 934201     | AD1-047 C    | 6.24      |
| 934231     | AD1-050 C    | 2.73      |
| 934331     | AD1-057 C O1 | 10.32     |
| 934521     | AD1-076 C    | 110.71    |
| 936401     | AD2-051 C O1 | 15.91     |
| 936531     | AD2-068 C    | 6.55      |
| 936701     | AD2-089 C    | 9.29      |
| 937571     | AD2-169 C    | 8.2       |
| 938171     | AE1-026 C1 O | 58.56     |
| 938172     | AE1-026 C2 O | 8.47      |
| 938221     | AE1-035 C    | 4.88      |
| 938661     | AE1-088      | 6.3       |
| 939071     | AE1-135 C O1 | 11.68     |
| 940491     | AE2-034 C    | 16.91     |
| 940521     | AE2-037 C O1 | 14.19     |
| 940571     | AE2-044 C    | 4.47      |
| 941541     | AE2-151 C    | 1.97      |
| 941951     | AE2-207      | 2.89      |
| 942471     | AE2-260 C O1 | 8.05      |
| 942711     | AE2-287 C O1 | 7.0       |
| 943171     | AE2-346 C    | 2.85      |
| AA2-074    | AA2-074      | 2.73      |
| CARR       | CARR         | 0.19      |
| CBM-S1     | CBM-S1       | 5.98      |
| CBM-S2     | CBM-S2       | 7.05      |
| CBM-W1     | CBM-W1       | 6.2       |
| CBM-W2     | CBM-W2       | 39.24     |
| CIN        | CIN          | 2.78      |
| CPL        | CPL          | 4.02      |
| IPL        | IPL          | 1.74      |
| LGEE       | LGEE         | 0.8       |
| MEC        | MEC          | 6.14      |
| MECS       | MECS         | 2.71      |
| RENSSELAER | RENSSELAER   | 0.15      |
| WEC        | WEC          | 0.75      |

### 13.6.29 Index 29

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090712 | 314579    | 6HORNRTN | DVP           | 934330  | AD1-057 TAP | DVP         | 1      | DVP_P1-2: LN 238-B | single | 441.8      | 125.38                | 128.73                 | DC    | 14.81     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.3       |
| 315115 | 1S HAMPT1    | 0.59      |
| 315126 | 1ROARAP2     | 1.2       |
| 315128 | 1ROARAP4     | 1.15      |
| 315136 | 1ROSEMG1     | 3.99      |
| 315137 | 1ROSEMS1     | 2.47      |
| 315138 | 1ROSEMG2     | 1.87      |
| 315139 | 1GASTONA     | 4.78      |
| 315141 | 1GASTONB     | 4.78      |
| 315150 | 1BUGGS 1     | 4.52      |
| 315151 | 1BUGGS 2     | 4.52      |
| 315158 | 1KERR 1      | 0.13      |
| 315159 | 1KERR 2      | 0.55      |
| 315160 | 1KERR 3      | 0.54      |
| 315161 | 1KERR 4      | 0.54      |
| 315162 | 1KERR 5      | 0.54      |
| 315163 | 1KERR 6      | 0.54      |
| 315164 | 1KERR 7      | 0.54      |
| 917331 | Z2-043 C     | 0.12      |
| 918491 | AA1-063AC OP | 0.96      |
| 918511 | AA1-065 C OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 1.11      |
| 920041 | AA2-088 C OP | 0.54      |
| 920671 | AA2-174 C    | 0.05      |
| 923801 | AB2-015 C O1 | 4.25      |
| 923911 | AB2-031 C O1 | 3.11      |
| 923991 | AB2-040 C O1 | 1.24      |
| 924021 | AB2-043 C O1 | 0.18      |
| 924161 | AB2-060 C O1 | 0.5       |
| 924301 | AB2-077 C O1 | 0.11      |
| 924311 | AB2-078 C O1 | 0.11      |
| 924321 | AB2-079 C O1 | 0.11      |
| 924401 | AB2-089 C    | 1.36      |
| 924501 | AB2-099 C    | 0.33      |
| 924511 | AB2-100 C    | 21.77     |
| 925171 | AB2-174 C O1 | 10.05     |
| 925611 | AC1-036 C    | 0.04      |
| 925781 | AC1-054 C O1 | 5.04      |
| 926071 | AC1-086 C    | 44.1      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 930861     | AB1-132 C O1 | 3.65      |
| 931231     | AB1-173 C    | 0.38      |
| 931241     | AB1-173AC    | 0.38      |
| 933991     | AD1-023 C    | 4.49      |
| 934201     | AD1-047 C    | 11.13     |
| 934231     | AD1-050 C    | 3.0       |
| 934521     | AD1-076 C    | 16.11     |
| 936261     | AD2-033 C    | 5.0       |
| 936361     | AD2-046 C O1 | 4.59      |
| 936401     | AD2-051 C O1 | 4.71      |
| 936481     | AD2-063 C O1 | 6.38      |
| 936711     | AD2-090 C O1 | 4.16      |
| 937571     | AD2-169 C    | 13.44     |
| 938171     | AE1-026 C1 O | 10.29     |
| 938172     | AE1-026 C2 O | 1.49      |
| 938221     | AE1-035 C    | 1.06      |
| 938771     | AE1-103 C O1 | 1.63      |
| 939071     | AE1-135 C O1 | 38.52     |
| 939181     | AE1-148 C O1 | 4.5       |
| 939371     | AE1-168 C    | 4.69      |
| 940241     | AE2-006      | 0.18      |
| 940481     | AE2-033 C    | 28.57     |
| 940521     | AE2-037 C O1 | 4.08      |
| 940661     | AE2-053      | 1.67      |
| 941541     | AE2-151 C    | 0.58      |
| 942451     | AE2-258      | 1.09      |
| 942471     | AE2-260 C O1 | 26.54     |
| 942711     | AE2-287 C O1 | 14.81     |
| 943171     | AE2-346 C    | 1.0       |
| BLUEG      | BLUEG        | 3.44      |
| CALDERWOOD | CALDERWOOD   | 0.68      |
| CANNELTON  | CANNELTON    | 0.23      |
| CARR       | CARR         | 0.0       |
| CATAWBA    | CATAWBA      | 0.66      |
| CHEOAH     | CHEOAH       | 0.64      |
| CHILHOWEE  | CHILHOWEE    | 0.22      |
| COFFEEN    | COFFEEN      | 0.4       |
| COTTONWOOD | COTTONWOOD   | 2.3       |
| DUCKCREEK  | DUCKCREEK    | 0.82      |
| EDWARDS    | EDWARDS      | 0.37      |
| ELMERSMITH | ELMERSMITH   | 0.41      |
| FARMERCITY | FARMERCITY   | 0.29      |
| G-007A     | G-007A       | 0.11      |
| GIBSON     | GIBSON       | 0.15      |
| HAMLET     | HAMLET       | 1.33      |
| NEWTON     | NEWTON       | 1.04      |
| PRAIRIE    | PRAIRIE      | 2.16      |
| RENSSELAER | RENSSELAER   | 0.0       |
| SANTEETLA  | SANTEETLA    | 0.19      |
| SMITHLAND  | SMITHLAND    | 0.19      |
| TATANKA    | TATANKA      | 0.49      |
| TILTON     | TILTON       | 0.44      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TRIMBLE</b>    | TRIMBLE    | 0.38             |
| <b>TVA</b>        | TVA        | 1.93             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.95             |
| <b>VFT</b>        | VFT        | 0.26             |

### 13.6.30 Index 30

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME           | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|---------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090229 | 314583    | 6LAKEVEW | DVP           | 314561  | 6CAROLNA | DVP         | 1      | DVP_P1-2: LN 2056-A | single | 375.06     | 143.27                | 144.86                 | DC    | 5.96      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314704     | 3LAWRENC     | 0.13      |
| 315136     | 1ROSEMG1     | 5.49      |
| 315137     | 1ROSEMS1     | 3.41      |
| 315138     | 1ROSEMG2     | 2.57      |
| 315139     | 1GASTONA     | 7.65      |
| 315141     | 1GASTONB     | 7.65      |
| 923851     | AB2-025 C    | 0.27      |
| 924511     | AB2-100 C    | 21.55     |
| 926071     | AC1-086 C    | 70.57     |
| 930861     | AB1-132 C O1 | 5.84      |
| 934233     | AD1-050 BAT  | 3.51      |
| 934331     | AD1-057 C O1 | 34.97     |
| 935211     | AD1-156 C    | 0.07      |
| 938174     | AE1-026 CBAT | 2.88      |
| 938661     | AE1-088      | 2.13      |
| 939071     | AE1-135 C O1 | 34.86     |
| 940481     | AE2-033 C    | 16.11     |
| 940541     | AE2-040      | 2.87      |
| 942471     | AE2-260 C O1 | 24.03     |
| 942711     | AE2-287 C O1 | 5.96      |
| BLUEG      | BLUEG        | 2.99      |
| CALDERWOOD | CALDERWOOD   | 0.61      |
| CANNELTON  | CANNELTON    | 0.2       |
| CATAWBA    | CATAWBA      | 0.59      |
| CBM-N      | CBM-N        | 0.07      |
| CHEOAH     | CHEOAH       | 0.57      |
| CHILHOWEE  | CHILHOWEE    | 0.2       |
| COFFEEN    | COFFEEN      | 0.35      |
| COTTONWOOD | COTTONWOOD   | 2.05      |
| DUCKCREEK  | DUCKCREEK    | 0.72      |
| EDWARDS    | EDWARDS      | 0.32      |
| ELMERSMITH | ELMERSMITH   | 0.36      |
| FARMERCITY | FARMERCITY   | 0.25      |
| G-007A     | G-007A       | 0.35      |
| GIBSON     | GIBSON       | 0.13      |
| HAMLET     | HAMLET       | 1.2       |
| NEWTON     | NEWTON       | 0.91      |
| NYISO      | NYISO        | 0.31      |
| PRAIRIE    | PRAIRIE      | 1.9       |
| SANTEETLA  | SANTEETLA    | 0.17      |
| SMITHLAND  | SMITHLAND    | 0.17      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TATANKA</b>    | TATANKA    | 0.43             |
| <b>TILTON</b>     | TILTON     | 0.38             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.33             |
| <b>TVA</b>        | TVA        | 1.72             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.85             |
| <b>VFT</b>        | VFT        | 0.94             |

### 13.6.31 Index 31

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090859 | 314591    | 6NASH    | DVP           | 304226  | 6PA-RMOUNT#4 | CPL         | 1      | DVP_P1-2: LN 2058 | single | 470.0      | 119.98                | 121.35                 | DC    | 6.42      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.13      |
| 315115 | 1S HAMPT1    | 0.55      |
| 315126 | 1ROARAP2     | 0.82      |
| 315128 | 1ROARAP4     | 0.79      |
| 315131 | 1EDGECEMA    | 25.25     |
| 315132 | 1EDGECEMB    | 25.25     |
| 315136 | 1ROSEMG1     | 2.14      |
| 315137 | 1ROSEMS1     | 1.33      |
| 315138 | 1ROSEMG2     | 1.0       |
| 315139 | 1GASTONA     | 2.57      |
| 315141 | 1GASTONB     | 2.57      |
| 315292 | 1DOMTR78     | 0.6       |
| 315293 | 1DOMTR9      | 0.49      |
| 315294 | 1DOMTR10     | 0.88      |
| 901081 | W1-029 C     | 0.25      |
| 916041 | Z1-036 C     | 0.3       |
| 917331 | Z2-043 C     | 0.23      |
| 917341 | Z2-044 C     | 0.21      |
| 917511 | Z2-088 C OP1 | 1.49      |
| 918491 | AA1-063AC OP | 0.8       |
| 918511 | AA1-065 C OP | 0.74      |
| 918531 | AA1-067 C    | 0.15      |
| 918561 | AA1-072 C    | 0.03      |
| 919691 | AA2-053 C    | 0.84      |
| 919701 | AA2-057 C    | 8.3       |
| 920041 | AA2-088 C OP | 0.47      |
| 920591 | AA2-165 C    | 0.14      |
| 920671 | AA2-174 C    | 0.04      |
| 920691 | AA2-178 C    | 0.55      |
| 923801 | AB2-015 C O1 | 4.03      |
| 923851 | AB2-025 C    | 0.12      |
| 923911 | AB2-031 C O1 | 1.64      |
| 923991 | AB2-040 C O1 | 0.66      |
| 924151 | AB2-059 C O1 | 2.1       |
| 924401 | AB2-089 C    | 0.74      |
| 924491 | AB2-098 C    | 0.41      |
| 924501 | AB2-099 C    | 0.41      |
| 924511 | AB2-100 C    | 8.56      |
| 925121 | AB2-169 C    | 0.5       |
| 925171 | AB2-174 C O1 | 5.03      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925591     | AC1-034 C    | 11.15     |
| 925781     | AC1-054 C O1 | 2.89      |
| 926071     | AC1-086 C    | 23.71     |
| 926201     | AC1-098 C    | 6.04      |
| 926211     | AC1-099 C    | 2.02      |
| 927021     | AC1-189 C    | 9.92      |
| 927141     | AC1-208 C    | 9.24      |
| 930401     | AB1-081 C O1 | 1.78      |
| 930861     | AB1-132 C O1 | 1.96      |
| 931231     | AB1-173 C    | 0.2       |
| 931241     | AB1-173AC    | 0.2       |
| 932631     | AC2-084 C    | 8.61      |
| 933991     | AD1-023 C    | 7.55      |
| 934201     | AD1-047 C    | 5.89      |
| 934231     | AD1-050 C    | 1.64      |
| 934331     | AD1-057 C O1 | 20.2      |
| 934521     | AD1-076 C    | 29.35     |
| 936401     | AD2-051 C O1 | 6.26      |
| 936701     | AD2-089 C    | 14.33     |
| 936711     | AD2-090 C O1 | 3.77      |
| 937571     | AD2-169 C    | 7.54      |
| 938171     | AE1-026 C1 O | 16.65     |
| 938172     | AE1-026 C2 O | 2.41      |
| 938221     | AE1-035 C    | 1.51      |
| 938661     | AE1-088      | 2.09      |
| 938771     | AE1-103 C O1 | 1.59      |
| 939071     | AE1-135 C O1 | 14.38     |
| 940481     | AE2-033 C    | 7.2       |
| 940491     | AE2-034 C    | 3.96      |
| 940521     | AE2-037 C O1 | 5.95      |
| 940541     | AE2-040      | 1.32      |
| 940571     | AE2-044 C    | 7.3       |
| 941501     | AE2-147 C    | 4.73      |
| 941541     | AE2-151 C    | 0.78      |
| 941951     | AE2-207      | 4.72      |
| 942471     | AE2-260 C O1 | 9.91      |
| 942711     | AE2-287 C O1 | 6.42      |
| 942851     | AE2-304 C    | 0.21      |
| 943171     | AE2-346 C    | 1.23      |
| BLUEG      | BLUEG        | 6.03      |
| CALDERWOOD | CALDERWOOD   | 1.22      |
| CANNELTON  | CANNELTON    | 0.41      |
| CATAWBA    | CATAWBA      | 1.19      |
| CBM-N      | CBM-N        | 0.13      |
| CHEOAH     | CHEOAH       | 1.14      |
| CHILHOWEE  | CHILHOWEE    | 0.4       |
| COFFEEN    | COFFEEN      | 0.7       |
| COTTONWOOD | COTTONWOOD   | 4.09      |
| DUCKCREEK  | DUCKCREEK    | 1.44      |
| EDWARDS    | EDWARDS      | 0.64      |
| ELMERSMITH | ELMERSMITH   | 0.72      |
| FARMERCITY | FARMERCITY   | 0.5       |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007A</b>     | G-007A     | 0.66             |
| <b>GIBSON</b>     | GIBSON     | 0.26             |
| <b>HAMLET</b>     | HAMLET     | 2.34             |
| <b>NEWTON</b>     | NEWTON     | 1.82             |
| <b>NYISO</b>      | NYISO      | 0.55             |
| <b>PRAIRIE</b>    | PRAIRIE    | 3.81             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.34             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.34             |
| <b>TATANKA</b>    | TATANKA    | 0.86             |
| <b>TILTON</b>     | TILTON     | 0.76             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.66             |
| <b>TVA</b>        | TVA        | 3.43             |
| <b>UNIONPOWER</b> | UNIONPOWER | 1.7              |
| <b>VFT</b>        | VFT        | 1.75             |

### 13.6.32 Index 32

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720551 | 314599    | 6ROA VAL | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P4-2: 23872 | breaker | 671.0      | 108.34                | 110.03                 | DC    | 25.15     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.45      |
| 314572 | 3EMPORIA     | 0.63      |
| 314578 | 3HORNRTN     | 3.69      |
| 314623 | 3WITAKRS     | 0.77      |
| 314704 | 3LAWRENC     | 0.3       |
| 315126 | 1ROARAP2     | 1.21      |
| 315131 | 1EDGECEMA    | 5.63      |
| 315132 | 1EDGECEMB    | 5.63      |
| 315136 | 1ROSEMG1     | 3.06      |
| 315137 | 1ROSEMS1     | 1.9       |
| 315138 | 1ROSEMG2     | 1.43      |
| 315139 | 1GASTONA     | 4.69      |
| 315141 | 1GASTONB     | 4.69      |
| 315150 | 1BUGGS 1     | 5.53      |
| 315151 | 1BUGGS 2     | 5.53      |
| 917342 | Z2-044 E     | 0.33      |
| 918492 | AA1-063AE OP | 2.19      |
| 919692 | AA2-053 E    | 3.14      |
| 919701 | AA2-057 C    | 4.16      |
| 919702 | AA2-057 E    | 2.08      |
| 920592 | AA2-165 E    | 0.27      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 3.11      |
| 923912 | AB2-031 E O1 | 1.53      |
| 923991 | AB2-040 C O1 | 1.24      |
| 923992 | AB2-040 E O1 | 8.35      |
| 924022 | AB2-043 E O1 | 2.74      |
| 924152 | AB2-059 E O1 | 3.09      |
| 924162 | AB2-060 E O1 | 2.23      |
| 924302 | AB2-077 E O1 | 0.7       |
| 924312 | AB2-078 E O1 | 0.7       |
| 924322 | AB2-079 E O1 | 0.7       |
| 924401 | AB2-089 C    | 1.54      |
| 924402 | AB2-089 E    | 0.79      |
| 924511 | AB2-100 C    | 21.44     |
| 924512 | AB2-100 E    | 10.56     |
| 925171 | AB2-174 C O1 | 10.03     |
| 925172 | AB2-174 E O1 | 9.08      |
| 925591 | AC1-034 C    | 3.88      |
| 925592 | AC1-034 E    | 2.93      |
| 925612 | AC1-036 E    | 0.36      |
| 925781 | AC1-054 C O1 | 5.59      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925782 | AC1-054 E O1 | 2.57      |
| 926071 | AC1-086 C    | 43.26     |
| 926072 | AC1-086 E    | 19.69     |
| 926201 | AC1-098 C    | 2.47      |
| 926202 | AC1-098 E    | 1.47      |
| 926211 | AC1-099 C    | 0.83      |
| 926212 | AC1-099 E    | 0.49      |
| 927141 | AC1-208 C    | 6.05      |
| 927142 | AC1-208 E    | 2.69      |
| 930402 | AB1-081 E O1 | 2.18      |
| 930861 | AB1-132 C O1 | 3.58      |
| 930862 | AB1-132 E O1 | 12.59     |
| 931231 | AB1-173 C    | 0.38      |
| 931232 | AB1-173 E    | 1.46      |
| 931241 | AB1-173AC    | 0.38      |
| 931242 | AB1-173AE    | 1.46      |
| 932631 | AC2-084 C    | 3.52      |
| 932632 | AC2-084 E    | 1.74      |
| 934201 | AD1-047 C    | 11.13     |
| 934202 | AD1-047 E    | 7.42      |
| 934231 | AD1-050 C    | 3.39      |
| 934232 | AD1-050 E    | 1.85      |
| 934331 | AD1-057 C O1 | 12.73     |
| 934332 | AD1-057 E O1 | 6.79      |
| 936261 | AD2-033 C    | 5.69      |
| 936262 | AD2-033 E    | 3.79      |
| 936361 | AD2-046 C O1 | 5.42      |
| 936362 | AD2-046 E O1 | 2.49      |
| 936481 | AD2-063 C O1 | 7.3       |
| 936482 | AD2-063 E O1 | 4.87      |
| 937571 | AD2-169 C    | 13.45     |
| 937572 | AD2-169 E    | 8.97      |
| 938174 | AE1-026 CBAT | 1.52      |
| 938175 | AE1-026 EBAT | 6.08      |
| 938661 | AE1-088      | 0.92      |
| 939071 | AE1-135 C O1 | 37.95     |
| 939072 | AE1-135 E O1 | 25.3      |
| 939181 | AE1-148 C O1 | 5.31      |
| 939182 | AE1-148 E O1 | 3.54      |
| 940241 | AE2-006      | 0.2       |
| 940481 | AE2-033 C    | 28.14     |
| 940482 | AE2-033 E    | 18.97     |
| 940571 | AE2-044 C    | 2.54      |
| 940572 | AE2-044 E    | 1.09      |
| 940661 | AE2-053      | 1.98      |
| 941951 | AE2-207      | 1.64      |
| 942451 | AE2-258      | 1.25      |
| 942471 | AE2-260 C O1 | 26.15     |
| 942472 | AE2-260 E O1 | 37.09     |
| 942711 | AE2-287 C O1 | 15.09     |
| 942712 | AE2-287 E O1 | 10.06     |
| CARR   | CARR         | 0.09      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-S1</b>     | CBM-S1     | 1.68             |
| <b>CBM-S2</b>     | CBM-S2     | 1.87             |
| <b>CBM-W1</b>     | CBM-W1     | 1.69             |
| <b>CBM-W2</b>     | CBM-W2     | 10.92            |
| <b>CIN</b>        | CIN        | 0.77             |
| <b>CPL</b>        | CPL        | 0.94             |
| <b>G-007</b>      | G-007      | 0.31             |
| <b>IPL</b>        | IPL        | 0.48             |
| <b>LGEE</b>       | LGEE       | 0.22             |
| <b>MEC</b>        | MEC        | 1.7              |
| <b>MECS</b>       | MECS       | 0.7              |
| <b>O-066</b>      | O-066      | 1.98             |
| <b>RENSSELAER</b> | RENSSELAER | 0.07             |
| <b>WEC</b>        | WEC        | 0.2              |

### 13.6.33 Index 33

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720570 | 314600    | 3PLHITP  | DVP           | 314559  | 3CAROLNA | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 351.0      | 100.3                 | 107.1                  | DC    | 23.86     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314572     | 3EMPORIA     | 0.88      |
| 314704     | 3LAWRENC     | 0.3       |
| 315139     | 1GASTONA     | 1.79      |
| 315141     | 1GASTONB     | 1.79      |
| 923852     | AB2-025 E    | 0.46      |
| 923911     | AB2-031 C O1 | 6.95      |
| 923912     | AB2-031 E O1 | 3.42      |
| 923991     | AB2-040 C O1 | 2.78      |
| 923992     | AB2-040 E O1 | 18.68     |
| 924511     | AB2-100 C    | 8.95      |
| 924512     | AB2-100 E    | 4.41      |
| 925171     | AB2-174 C O1 | 19.11     |
| 925172     | AB2-174 E O1 | 17.29     |
| 926071     | AC1-086 C    | 16.53     |
| 926072     | AC1-086 E    | 7.52      |
| 930861     | AB1-132 C O1 | 1.37      |
| 930862     | AB1-132 E O1 | 4.81      |
| 931231     | AB1-173 C    | 0.85      |
| 931232     | AB1-173 E    | 3.27      |
| 931241     | AB1-173AC    | 0.85      |
| 931242     | AB1-173AE    | 3.27      |
| 934201     | AD1-047 C    | 24.91     |
| 934202     | AD1-047 E    | 16.6      |
| 937571     | AD2-169 C    | 35.3      |
| 937572     | AD2-169 E    | 23.53     |
| 939071     | AE1-135 C O1 | 16.03     |
| 939072     | AE1-135 E O1 | 10.69     |
| 940481     | AE2-033 C    | 7.42      |
| 940482     | AE2-033 E    | 5.0       |
| 940541     | AE2-040      | 1.32      |
| 942471     | AE2-260 C O1 | 11.05     |
| 942472     | AE2-260 E O1 | 15.67     |
| 942711     | AE2-287 C O1 | 14.32     |
| 942712     | AE2-287 E O1 | 9.55      |
| BLUEG      | BLUEG        | 1.24      |
| CALDERWOOD | CALDERWOOD   | 0.28      |
| CANNELTON  | CANNELTON    | 0.09      |
| CATAWBA    | CATAWBA      | 0.28      |
| CBM-N      | CBM-N        | 0.07      |
| CHEOAH     | CHEOAH       | 0.26      |
| CHILHOWEE  | CHILHOWEE    | 0.09      |

| Bus #      | Bus        | MW Impact |
|------------|------------|-----------|
| COFFEEN    | COFFEEN    | 0.15      |
| COTTONWOOD | COTTONWOOD | 0.92      |
| DUCKCREEK  | DUCKCREEK  | 0.3       |
| EDWARDS    | EDWARDS    | 0.13      |
| ELMERSMITH | ELMERSMITH | 0.15      |
| FARMERCITY | FARMERCITY | 0.11      |
| G-007A     | G-007A     | 0.27      |
| GIBSON     | GIBSON     | 0.05      |
| HAMLET     | HAMLET     | 0.57      |
| NEWTON     | NEWTON     | 0.38      |
| NYISO      | NYISO      | 0.29      |
| PRAIRIE    | PRAIRIE    | 0.82      |
| SANTEETLA  | SANTEETLA  | 0.08      |
| SMITHLAND  | SMITHLAND  | 0.07      |
| TATANKA    | TATANKA    | 0.18      |
| TILTON     | TILTON     | 0.16      |
| TRIMBLE    | TRIMBLE    | 0.14      |
| TVA        | TVA        | 0.77      |
| UNIONPOWER | UNIONPOWER | 0.39      |
| VFT        | VFT        | 0.73      |

### 13.6.34 Index 34

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type  | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|-------|------------|-----------------------|------------------------|-------|-----------|
| 8242175 | 314625    | 3AULANDR | DVP           | 314568  | 3EARLEYS | DVP         | 1      | DVP_P7-1: LN 56-2012 | tower | 136.0      | 106.36                | 108.56                 | DC    | 6.61      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 0.17      |
| 314578 | 3HORNRTN     | 2.25      |
| 315126 | 1ROARAP2     | 0.77      |
| 315128 | 1ROARAP4     | 0.74      |
| 918491 | AA1-063AC OP | 2.63      |
| 918492 | AA1-063AE OP | 10.17     |
| 919691 | AA2-053 C    | 1.86      |
| 919692 | AA2-053 E    | 6.56      |
| 920671 | AA2-174 C    | 0.09      |
| 920672 | AA2-174 E    | 0.76      |
| 923911 | AB2-031 C O1 | 1.2       |
| 923912 | AB2-031 E O1 | 0.59      |
| 923992 | AB2-040 E O1 | 3.23      |
| 924401 | AB2-089 C    | 0.83      |
| 924402 | AB2-089 E    | 0.43      |
| 925171 | AB2-174 C O1 | 3.42      |
| 925172 | AB2-174 E O1 | 3.1       |
| 925781 | AC1-054 C O1 | 3.12      |
| 925782 | AC1-054 E O1 | 1.44      |
| 926071 | AC1-086 C    | 6.65      |
| 926072 | AC1-086 E    | 3.03      |
| 930862 | AB1-132 E O1 | 1.94      |
| 931232 | AB1-173 E    | 0.56      |
| 931242 | AB1-173AE    | 0.56      |
| 934201 | AD1-047 C    | 4.3       |
| 934202 | AD1-047 E    | 2.87      |
| 934231 | AD1-050 C    | 1.84      |
| 934232 | AD1-050 E    | 1.01      |
| 937571 | AD2-169 C    | 5.91      |
| 937572 | AD2-169 E    | 3.94      |
| 942711 | AE2-287 C O1 | 3.97      |
| 942712 | AE2-287 E O1 | 2.64      |
| CARR   | CARR         | 0.02      |
| CBM-S1 | CBM-S1       | 0.12      |
| CBM-S2 | CBM-S2       | 0.11      |
| CBM-W1 | CBM-W1       | 0.09      |
| CBM-W2 | CBM-W2       | 0.73      |
| CIN    | CIN          | 0.05      |
| CPL    | CPL          | 0.02      |
| G-007  | G-007        | 0.07      |
| IPL    | IPL          | 0.03      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>LGEE</b>       | LGEE       | 0.01             |
| <b>MEC</b>        | MEC        | 0.11             |
| <b>MECS</b>       | MECS       | 0.02             |
| <b>O-066</b>      | O-066      | 0.44             |
| <b>RENSSELAER</b> | RENSSELAER | 0.02             |
| <b>WEC</b>        | WEC        | 0.01             |

### 13.6.35 Index 35

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type  | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|-------|------------|-----------------------|------------------------|-------|-----------|
| 8242142 | 314626    | 3WOODLND | DVP           | 314625  | 3AULANDR | DVP         | 1      | DVP_P7-1: LN 56-2060 | tower | 136.0      | 111.8                 | 114.0                  | DC    | 6.61      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 0.17      |
| 314578 | 3HORNRTN     | 2.25      |
| 315126 | 1ROARAP2     | 0.77      |
| 315128 | 1ROARAP4     | 0.74      |
| 918491 | AA1-063AC OP | 2.63      |
| 918492 | AA1-063AE OP | 10.17     |
| 919691 | AA2-053 C    | 1.86      |
| 919692 | AA2-053 E    | 6.56      |
| 920671 | AA2-174 C    | 0.09      |
| 920672 | AA2-174 E    | 0.76      |
| 923911 | AB2-031 C O1 | 1.2       |
| 923912 | AB2-031 E O1 | 0.59      |
| 923992 | AB2-040 E O1 | 3.23      |
| 924401 | AB2-089 C    | 0.83      |
| 924402 | AB2-089 E    | 0.43      |
| 925171 | AB2-174 C O1 | 3.42      |
| 925172 | AB2-174 E O1 | 3.1       |
| 925781 | AC1-054 C O1 | 3.12      |
| 925782 | AC1-054 E O1 | 1.44      |
| 926071 | AC1-086 C    | 6.65      |
| 926072 | AC1-086 E    | 3.03      |
| 930862 | AB1-132 E O1 | 1.94      |
| 931232 | AB1-173 E    | 0.56      |
| 931242 | AB1-173AE    | 0.56      |
| 934201 | AD1-047 C    | 4.3       |
| 934202 | AD1-047 E    | 2.87      |
| 934231 | AD1-050 C    | 1.84      |
| 934232 | AD1-050 E    | 1.01      |
| 937571 | AD2-169 C    | 5.91      |
| 937572 | AD2-169 E    | 3.94      |
| 942711 | AE2-287 C O1 | 3.97      |
| 942712 | AE2-287 E O1 | 2.64      |
| CARR   | CARR         | 0.02      |
| CBM-S1 | CBM-S1       | 0.12      |
| CBM-S2 | CBM-S2       | 0.11      |
| CBM-W1 | CBM-W1       | 0.09      |
| CBM-W2 | CBM-W2       | 0.73      |
| CIN    | CIN          | 0.05      |
| CPL    | CPL          | 0.02      |
| G-007  | G-007        | 0.07      |
| IPL    | IPL          | 0.03      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>LGEE</b>       | LGEE       | 0.01             |
| <b>MEC</b>        | MEC        | 0.11             |
| <b>MECS</b>       | MECS       | 0.02             |
| <b>O-066</b>      | O-066      | 0.44             |
| <b>RENSSELAER</b> | RENSSELAER | 0.02             |
| <b>WEC</b>        | WEC        | 0.01             |

### 13.6.36 Index 36

| ID      | FROM BUS# | FROM BUS   | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|------------|---------------|---------|-------------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090787 | 314697    | 6SEGE HILL | DVP           | 927250  | AC1-221 TAP | DVP         | 1      | DVP_P1-2: LN 556 | single | 674.92     | 115.67                | 116.74                 | DC    | 8.66      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.4       |
| 314704 | 3LAWRENC     | 0.14      |
| 315150 | 1BUGGS 1     | 17.2      |
| 315151 | 1BUGGS 2     | 17.2      |
| 315153 | 1CLOVER1     | 27.86     |
| 315154 | 1CLOVER2     | 27.5      |
| 315156 | 1HALLBR1     | 0.91      |
| 315158 | 1KERR 1      | 0.22      |
| 315159 | 1KERR 2      | 0.91      |
| 315160 | 1KERR 3      | 0.89      |
| 315161 | 1KERR 4      | 0.89      |
| 315162 | 1KERR 5      | 0.89      |
| 315163 | 1KERR 6      | 0.89      |
| 315164 | 1KERR 7      | 0.89      |
| 315165 | 1HURT 1      | 5.15      |
| 315166 | 1HURT 2      | 5.15      |
| 315171 | 1BREMO 4     | 13.53     |
| 315191 | 1BEARGRDN G1 | 2.03      |
| 315192 | 1BEARGRDN G2 | 2.03      |
| 315193 | 1BEARGRDN S1 | 4.17      |
| 315266 | 1PLYWOOD A   | 2.35      |
| 920291 | AA2-127      | 0.42      |
| 924021 | AB2-043 C O1 | 0.52      |
| 924031 | AB2-045 C    | 0.3       |
| 924161 | AB2-060 C O1 | 1.49      |
| 924301 | AB2-077 C O1 | 0.33      |
| 924311 | AB2-078 C O1 | 0.33      |
| 924321 | AB2-079 C O1 | 0.33      |
| 924401 | AB2-089 C    | 1.61      |
| 925611 | AC1-036 C    | 0.16      |
| 925661 | AC1-042 C    | 1.59      |
| 925781 | AC1-054 C O1 | 4.97      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 11.92     |
| 926021 | AC1-080 C    | 3.98      |
| 926271 | AC1-105 C O1 | 14.49     |
| 926641 | AC1-145 C    | 1.9       |
| 927261 | AC1-222 C    | 10.12     |
| 932511 | AC2-071 C    | 0.3       |
| 934231 | AD1-050 C    | 3.55      |
| 934311 | AD1-055 C    | 7.02      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 934611     | AD1-087 C O1 | 26.93     |
| 934621     | AD1-088 C    | 31.81     |
| 935171     | AD1-152 C O1 | 26.76     |
| 935221     | AD1-157 C    | 0.26      |
| 935231     | AD1-160 C    | 1.55      |
| 936261     | AD2-033 C    | 17.8      |
| 936331     | AD2-043 C    | 13.11     |
| 936361     | AD2-046 C O1 | 8.37      |
| 936481     | AD2-063 C O1 | 20.34     |
| 937481     | AD2-202 C O1 | 7.42      |
| 938371     | AE1-056 C    | 9.12      |
| 939181     | AE1-148 C O1 | 8.48      |
| 939371     | AE1-168 C    | 20.88     |
| 939941     | AE1-230 C1   | 0.72      |
| 940241     | AE2-006      | 0.66      |
| 940661     | AE2-053      | 3.16      |
| 941791     | AE2-182 C    | 5.75      |
| 941801     | AE2-185 C    | 4.49      |
| 941821     | AE2-187 C    | 4.49      |
| 942331     | AE2-246      | 1.39      |
| 942451     | AE2-258      | 3.16      |
| 942461     | AE2-259 C O1 | 14.35     |
| 942671     | AE2-283 C    | 3.95      |
| 942711     | AE2-287 C O1 | 8.66      |
| 942751     | AE2-291 C O1 | 15.64     |
| 942761     | AE2-292 C O1 | 19.47     |
| 943051     | AE2-328 C    | 22.49     |
| AC1-131    | AC1-131      | 5.19      |
| BLUEG      | BLUEG        | 6.75      |
| CALDERWOOD | CALDERWOOD   | 1.59      |
| CANNELTON  | CANNELTON    | 0.47      |
| CATAWBA    | CATAWBA      | 1.7       |
| CBM-N      | CBM-N        | 0.03      |
| CHEOAH     | CHEOAH       | 1.49      |
| CHILHOWEE  | CHILHOWEE    | 0.51      |
| COFFEEN    | COFFEEN      | 0.82      |
| COTTONWOOD | COTTONWOOD   | 5.18      |
| DUCKCREEK  | DUCKCREEK    | 1.66      |
| EDWARDS    | EDWARDS      | 0.74      |
| ELMERSMITH | ELMERSMITH   | 0.84      |
| FARMERCITY | FARMERCITY   | 0.6       |
| G-007A     | G-007A       | 0.3       |
| GIBSON     | GIBSON       | 0.3       |
| HAMLET     | HAMLET       | 3.18      |
| NEWTON     | NEWTON       | 2.12      |
| NYISO      | NYISO        | 0.11      |
| PRAIRIE    | PRAIRIE      | 4.55      |
| SANTEETLA  | SANTEETLA    | 0.44      |
| SMITHLAND  | SMITHLAND    | 0.41      |
| TATANKA    | TATANKA      | 1.01      |
| TILTON     | TILTON       | 0.86      |
| TRIMBLE    | TRIMBLE      | 0.74      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TVA</b>        | TVA        | 4.33             |
| <b>UNIONPOWER</b> | UNIONPOWER | 2.22             |
| <b>VFT</b>        | VFT        | 0.78             |

### 13.6.37 Index 37

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME            | Type  | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|----------------------|-------|------------|-----------------------|------------------------|-------|-----------|
| 8241964 | 314702    | 3KERR    | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P7-1: LN 22-90-A | tower | 199.0      | 165.33                | 168.14                 | DC    | 12.34     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315150 | 1BUGGS 1     | 15.54     |
| 315151 | 1BUGGS 2     | 15.54     |
| 315158 | 1KERR 1      | 0.56      |
| 315159 | 1KERR 2      | 2.26      |
| 315160 | 1KERR 3      | 2.23      |
| 315161 | 1KERR 4      | 2.23      |
| 315162 | 1KERR 5      | 2.23      |
| 315163 | 1KERR 6      | 2.23      |
| 315164 | 1KERR 7      | 2.23      |
| 924022 | AB2-043 E O1 | 6.02      |
| 924162 | AB2-060 E O1 | 4.91      |
| 924302 | AB2-077 E O1 | 1.58      |
| 924312 | AB2-078 E O1 | 1.58      |
| 924322 | AB2-079 E O1 | 1.58      |
| 924401 | AB2-089 C    | 4.63      |
| 924402 | AB2-089 E    | 2.38      |
| 925612 | AC1-036 E    | 0.79      |
| 925781 | AC1-054 C O1 | 15.59     |
| 925782 | AC1-054 E O1 | 7.18      |
| 926271 | AC1-105 C O1 | 2.87      |
| 926272 | AC1-105 E O1 | 1.43      |
| 934231 | AD1-050 C    | 10.2      |
| 934232 | AD1-050 E    | 5.57      |
| 935222 | AD1-157 E    | 0.64      |
| 935231 | AD1-160 C    | 0.7       |
| 935232 | AD1-160 E    | 0.97      |
| 936261 | AD2-033 C    | 12.59     |
| 936262 | AD2-033 E    | 8.39      |
| 936361 | AD2-046 C O1 | 17.92     |
| 936362 | AD2-046 E O1 | 8.24      |
| 936481 | AD2-063 C O1 | 16.07     |
| 936482 | AD2-063 E O1 | 10.71     |
| 938371 | AE1-056 C    | 4.14      |
| 938372 | AE1-056 E    | 2.26      |
| 939181 | AE1-148 C O1 | 17.24     |
| 939182 | AE1-148 E O1 | 11.49     |
| 939371 | AE1-168 C    | 11.8      |
| 939372 | AE1-168 E    | 7.86      |
| 940241 | AE2-006      | 0.45      |
| 940661 | AE2-053      | 6.42      |
| 942451 | AE2-258      | 2.74      |

| <b>Bus #</b> | <b>Bus</b>   | <b>MW Impact</b> |
|--------------|--------------|------------------|
| 942461       | AE2-259 C O1 | 4.43             |
| 942462       | AE2-259 E O1 | 2.95             |
| 942711       | AE2-287 C O1 | 7.4              |
| 942712       | AE2-287 E O1 | 4.94             |
| BLUEG        | BLUEG        | 1.99             |
| CALDERWOOD   | CALDERWOOD   | 0.42             |
| CANNELTON    | CANNELTON    | 0.14             |
| CATAWBA      | CATAWBA      | 0.43             |
| CBM-N        | CBM-N        | 0.0              |
| CHEOAH       | CHEOAH       | 0.39             |
| CHILHOWEE    | CHILHOWEE    | 0.14             |
| COFFEEN      | COFFEEN      | 0.23             |
| COTTONWOOD   | COTTONWOOD   | 1.4              |
| DUCKCREEK    | DUCKCREEK    | 0.48             |
| EDWARDS      | EDWARDS      | 0.21             |
| ELMERSMITH   | ELMERSMITH   | 0.24             |
| FARMERCITY   | FARMERCITY   | 0.17             |
| G-007A       | G-007A       | 0.08             |
| GIBSON       | GIBSON       | 0.09             |
| HAMLET       | HAMLET       | 0.82             |
| NEWTON       | NEWTON       | 0.61             |
| NYISO        | NYISO        | 0.01             |
| PRAIRIE      | PRAIRIE      | 1.28             |
| SANTEETLA    | SANTEETLA    | 0.12             |
| SMITHLAND    | SMITHLAND    | 0.11             |
| TATANKA      | TATANKA      | 0.29             |
| TILTON       | TILTON       | 0.25             |
| TRIMBLE      | TRIMBLE      | 0.22             |
| TVA          | TVA          | 1.17             |
| UNIONPOWER   | UNIONPOWER   | 0.59             |
| VFT          | VFT          | 0.21             |

### 13.6.38 Index 38

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090890 | 314765    | 6MTEAGLE | DVP           | 314749  | 6CHARLVL | DVP         | 1      | DVP_P1-2: LN 556 | single | 661.76     | 101.89                | 102.9                  | DC    | 6.66      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.37      |
| 314704 | 3LAWRENC     | 0.12      |
| 315126 | 1ROARAP2     | 0.33      |
| 315150 | 1BUGGS 1     | 7.72      |
| 315151 | 1BUGGS 2     | 7.72      |
| 315153 | 1CLOVER1     | 8.63      |
| 315154 | 1CLOVER2     | 8.52      |
| 315158 | 1KERR 1      | 0.15      |
| 315159 | 1KERR 2      | 0.63      |
| 315160 | 1KERR 3      | 0.62      |
| 315161 | 1KERR 4      | 0.62      |
| 315162 | 1KERR 5      | 0.62      |
| 315163 | 1KERR 6      | 0.62      |
| 315164 | 1KERR 7      | 0.62      |
| 315170 | 1BREMO 3     | 21.85     |
| 315171 | 1BREMO 4     | 48.01     |
| 315191 | 1BEARGRDN G1 | 7.96      |
| 315192 | 1BEARGRDN G2 | 7.96      |
| 315193 | 1BEARGRDN S1 | 16.37     |
| 315266 | 1PLYWOOD A   | 0.61      |
| 920291 | AA2-127      | 1.65      |
| 923861 | AB2-026 C    | 0.36      |
| 923911 | AB2-031 C O1 | 0.76      |
| 923991 | AB2-040 C O1 | 0.3       |
| 924021 | AB2-043 C O1 | 0.3       |
| 924031 | AB2-045 C    | 0.59      |
| 924161 | AB2-060 C O1 | 0.88      |
| 924301 | AB2-077 C O1 | 0.19      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924401 | AB2-089 C    | 1.19      |
| 925171 | AB2-174 C O1 | 2.39      |
| 925611 | AC1-036 C    | 0.12      |
| 925781 | AC1-054 C O1 | 3.84      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 3.05      |
| 926021 | AC1-080 C    | 1.02      |
| 926271 | AC1-105 C O1 | 3.87      |
| 926451 | AC1-116 C    | 0.4       |
| 927251 | AC1-221 C    | 1.01      |
| 927261 | AC1-222 C    | 2.36      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931231     | AB1-173 C    | 0.09      |
| 931241     | AB1-173AC    | 0.09      |
| 932511     | AC2-071 C    | 0.58      |
| 932761     | AC2-100 C    | 2.33      |
| 933501     | AC2-165 C    | 14.27     |
| 934201     | AD1-047 C    | 2.71      |
| 934231     | AD1-050 C    | 2.62      |
| 934311     | AD1-055 C    | 1.64      |
| 934341     | AD1-058 C    | 2.53      |
| 934611     | AD1-087 C O1 | 6.64      |
| 934621     | AD1-088 C    | 15.85     |
| 934991     | AD1-131 C    | 0.83      |
| 935171     | AD1-152 C O1 | 6.6       |
| 935221     | AD1-157 C    | 0.25      |
| 935231     | AD1-160 C    | 1.51      |
| 936261     | AD2-033 C    | 13.05     |
| 936331     | AD2-043 C    | 3.06      |
| 936361     | AD2-046 C O1 | 5.59      |
| 936481     | AD2-063 C O1 | 13.31     |
| 937481     | AD2-202 C O1 | 1.83      |
| 937571     | AD2-169 C    | 3.35      |
| 938371     | AE1-056 C    | 8.89      |
| 938551     | AE1-074 C    | 0.78      |
| 938561     | AE1-075 C    | 2.6       |
| 938821     | AE1-108 C O1 | 27.49     |
| 939181     | AE1-148 C O1 | 5.6       |
| 939371     | AE1-168 C    | 18.14     |
| 939841     | AE1-220 C O1 | 8.76      |
| 940241     | AE2-006      | 0.51      |
| 940661     | AE2-053      | 2.08      |
| 941011     | AE2-092 C    | 16.65     |
| 941791     | AE2-182 C    | 2.87      |
| 942451     | AE2-258      | 1.84      |
| 942461     | AE2-259 C O1 | 15.98     |
| 942711     | AE2-287 C O1 | 6.66      |
| 942751     | AE2-291 C O1 | 4.27      |
| 942761     | AE2-292 C O1 | 5.32      |
| 943051     | AE2-328 C    | 17.8      |
| AA2-074    | AA2-074      | 1.72      |
| CARR       | CARR         | 0.27      |
| CBM-S1     | CBM-S1       | 2.57      |
| CBM-S2     | CBM-S2       | 4.55      |
| CBM-W1     | CBM-W1       | 0.85      |
| CBM-W2     | CBM-W2       | 15.02     |
| CIN        | CIN          | 0.47      |
| CPL        | CPL          | 2.52      |
| IPL        | IPL          | 0.26      |
| LGEE       | LGEE         | 0.14      |
| MEC        | MEC          | 1.64      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.12      |

### 13.6.39 Index 39

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|----------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090480 | 919140    | AA1-138 TAP | DVP           | 314537  | 6SUFFOLK | DVP         | 1      | DVP_P1-2: LN 2092 | single | 571.52     | 117.97                | 119.2                  | DC    | 7.0       |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.07      |
| 314704 | 3LAWRENC     | 0.14      |
| 315126 | 1ROARAP2     | 0.96      |
| 315128 | 1ROARAP4     | 0.92      |
| 315131 | 1EDGECEMA    | 9.42      |
| 315132 | 1EDGECEMB    | 9.42      |
| 315136 | 1ROSEMG1     | 1.68      |
| 315137 | 1ROSEMS1     | 1.04      |
| 315138 | 1ROSEMG2     | 0.79      |
| 315139 | 1GASTONA     | 2.37      |
| 315141 | 1GASTONB     | 2.37      |
| 315159 | 1KERR 2      | 0.53      |
| 315163 | 1KERR 6      | 0.52      |
| 315164 | 1KERR 7      | 0.52      |
| 315292 | 1DOMTR78     | 2.01      |
| 315293 | 1DOMTR9      | 1.64      |
| 315294 | 1DOMTR10     | 2.98      |
| 916041 | Z1-036 C     | 1.64      |
| 917331 | Z2-043 C     | 0.46      |
| 917341 | Z2-044 C     | 0.17      |
| 917511 | Z2-088 C OP1 | 1.67      |
| 918491 | AA1-063AC OP | 1.35      |
| 918511 | AA1-065 C OP | 2.38      |
| 918531 | AA1-067 C    | 0.36      |
| 918561 | AA1-072 C    | 0.07      |
| 919691 | AA2-053 C    | 1.22      |
| 919701 | AA2-057 C    | 7.67      |
| 920041 | AA2-088 C OP | 0.49      |
| 920591 | AA2-165 C    | 0.13      |
| 920671 | AA2-174 C    | 0.06      |
| 920691 | AA2-178 C    | 2.36      |
| 923911 | AB2-031 C O1 | 1.74      |
| 923991 | AB2-040 C O1 | 0.7       |
| 924151 | AB2-059 C O1 | 1.28      |
| 924401 | AB2-089 C    | 1.24      |
| 924491 | AB2-098 C    | 0.99      |
| 924501 | AB2-099 C    | 0.95      |
| 924511 | AB2-100 C    | 7.11      |
| 925121 | AB2-169 C    | 1.5       |
| 925171 | AB2-174 C O1 | 5.2       |
| 925591 | AC1-034 C    | 6.83      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925781     | AC1-054 C O1 | 4.49      |
| 926071     | AC1-086 C    | 21.84     |
| 926201     | AC1-098 C    | 7.82      |
| 926211     | AC1-099 C    | 2.62      |
| 927021     | AC1-189 C    | 13.69     |
| 927141     | AC1-208 C    | 10.08     |
| 930401     | AB1-081 C O1 | 1.09      |
| 930861     | AB1-132 C O1 | 1.81      |
| 931231     | AB1-173 C    | 0.21      |
| 931241     | AB1-173AC    | 0.21      |
| 932631     | AC2-084 C    | 11.14     |
| 933991     | AD1-023 C    | 27.21     |
| 934201     | AD1-047 C    | 6.24      |
| 934231     | AD1-050 C    | 2.73      |
| 934331     | AD1-057 C O1 | 10.32     |
| 934521     | AD1-076 C    | 110.71    |
| 936401     | AD2-051 C O1 | 15.91     |
| 936531     | AD2-068 C    | 6.55      |
| 936701     | AD2-089 C    | 9.29      |
| 937571     | AD2-169 C    | 8.2       |
| 938171     | AE1-026 C1 O | 58.56     |
| 938172     | AE1-026 C2 O | 8.47      |
| 938221     | AE1-035 C    | 4.88      |
| 938661     | AE1-088      | 6.3       |
| 939071     | AE1-135 C O1 | 11.68     |
| 940491     | AE2-034 C    | 16.91     |
| 940521     | AE2-037 C O1 | 14.19     |
| 940571     | AE2-044 C    | 4.47      |
| 941541     | AE2-151 C    | 1.97      |
| 941951     | AE2-207      | 2.89      |
| 942471     | AE2-260 C O1 | 8.05      |
| 942711     | AE2-287 C O1 | 7.0       |
| 943171     | AE2-346 C    | 2.85      |
| AA2-074    | AA2-074      | 2.73      |
| CARR       | CARR         | 0.19      |
| CBM-S1     | CBM-S1       | 5.98      |
| CBM-S2     | CBM-S2       | 7.05      |
| CBM-W1     | CBM-W1       | 6.2       |
| CBM-W2     | CBM-W2       | 39.24     |
| CIN        | CIN          | 2.78      |
| CPL        | CPL          | 4.02      |
| IPL        | IPL          | 1.74      |
| LGEE       | LGEE         | 0.8       |
| MEC        | MEC          | 6.14      |
| MECS       | MECS         | 2.71      |
| RENSSELAER | RENSSELAER   | 0.15      |
| WEC        | WEC          | 0.75      |

### 13.6.40 Index 40

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|--------------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090748 | 927250    | AC1-221 TAP | DVP           | 304070  | 6PERSON230 T | CPL         | 1      | DVP_P1-2: LN 556 | single | 718.0      | 119.55                | 120.55                 | DC    | 8.66      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.4       |
| 314704 | 3LAWRENC     | 0.14      |
| 315150 | 1BUGGS 1     | 17.2      |
| 315151 | 1BUGGS 2     | 17.2      |
| 315153 | 1CLOVER1     | 27.86     |
| 315154 | 1CLOVER2     | 27.5      |
| 315156 | 1HALLBR1     | 0.91      |
| 315158 | 1KERR 1      | 0.22      |
| 315159 | 1KERR 2      | 0.91      |
| 315160 | 1KERR 3      | 0.89      |
| 315161 | 1KERR 4      | 0.89      |
| 315162 | 1KERR 5      | 0.89      |
| 315163 | 1KERR 6      | 0.89      |
| 315164 | 1KERR 7      | 0.89      |
| 315165 | 1HURT 1      | 5.15      |
| 315166 | 1HURT 2      | 5.15      |
| 315171 | 1BREMO 4     | 13.53     |
| 315191 | 1BEARGRDN G1 | 2.03      |
| 315192 | 1BEARGRDN G2 | 2.03      |
| 315193 | 1BEARGRDN S1 | 4.17      |
| 315266 | 1PLYWOOD A   | 2.35      |
| 920291 | AA2-127      | 0.42      |
| 924021 | AB2-043 C O1 | 0.52      |
| 924031 | AB2-045 C    | 0.3       |
| 924161 | AB2-060 C O1 | 1.49      |
| 924301 | AB2-077 C O1 | 0.33      |
| 924311 | AB2-078 C O1 | 0.33      |
| 924321 | AB2-079 C O1 | 0.33      |
| 924401 | AB2-089 C    | 1.61      |
| 925611 | AC1-036 C    | 0.16      |
| 925661 | AC1-042 C    | 1.59      |
| 925781 | AC1-054 C O1 | 4.97      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 11.92     |
| 926021 | AC1-080 C    | 3.98      |
| 926271 | AC1-105 C O1 | 14.49     |
| 926641 | AC1-145 C    | 1.9       |
| 927251 | AC1-221 C    | 11.73     |
| 927261 | AC1-222 C    | 10.12     |
| 932511 | AC2-071 C    | 0.3       |
| 932761 | AC2-100 C    | 26.98     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 934231     | AD1-050 C    | 3.55      |
| 934311     | AD1-055 C    | 7.02      |
| 934341     | AD1-058 C    | 29.39     |
| 934611     | AD1-087 C O1 | 26.93     |
| 934621     | AD1-088 C    | 31.81     |
| 934991     | AD1-131 C    | 9.64      |
| 935171     | AD1-152 C O1 | 26.76     |
| 935221     | AD1-157 C    | 0.26      |
| 935231     | AD1-160 C    | 1.55      |
| 936261     | AD2-033 C    | 17.8      |
| 936331     | AD2-043 C    | 13.11     |
| 936361     | AD2-046 C O1 | 8.37      |
| 936481     | AD2-063 C O1 | 20.34     |
| 937481     | AD2-202 C O1 | 7.42      |
| 938371     | AE1-056 C    | 9.12      |
| 939181     | AE1-148 C O1 | 8.48      |
| 939371     | AE1-168 C    | 20.88     |
| 939941     | AE1-230 C1   | 0.72      |
| 940241     | AE2-006      | 0.66      |
| 940661     | AE2-053      | 3.16      |
| 941791     | AE2-182 C    | 5.75      |
| 941801     | AE2-185 C    | 4.49      |
| 941821     | AE2-187 C    | 4.49      |
| 942331     | AE2-246      | 1.39      |
| 942451     | AE2-258      | 3.16      |
| 942461     | AE2-259 C O1 | 14.35     |
| 942671     | AE2-283 C    | 3.95      |
| 942711     | AE2-287 C O1 | 8.66      |
| 942751     | AE2-291 C O1 | 15.64     |
| 942761     | AE2-292 C O1 | 19.47     |
| 943051     | AE2-328 C    | 22.49     |
| AC1-131    | AC1-131      | 5.19      |
| BLUEG      | BLUEG        | 6.75      |
| CALDERWOOD | CALDERWOOD   | 1.59      |
| CANNELTON  | CANNELTON    | 0.47      |
| CATAWBA    | CATAWBA      | 1.7       |
| CBM-N      | CBM-N        | 0.03      |
| CHEOAH     | CHEOAH       | 1.49      |
| CHILHOWEE  | CHILHOWEE    | 0.51      |
| COFFEEN    | COFFEEN      | 0.82      |
| COTTONWOOD | COTTONWOOD   | 5.18      |
| DUCKCREEK  | DUCKCREEK    | 1.66      |
| EDWARDS    | EDWARDS      | 0.74      |
| ELMERSMITH | ELMERSMITH   | 0.84      |
| FARMERCITY | FARMERCITY   | 0.6       |
| G-007A     | G-007A       | 0.3       |
| GIBSON     | GIBSON       | 0.3       |
| HAMLET     | HAMLET       | 3.18      |
| NEWTON     | NEWTON       | 2.12      |
| NYISO      | NYISO        | 0.11      |
| PRAIRIE    | PRAIRIE      | 4.55      |
| SANTEETLA  | SANTEETLA    | 0.44      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>SMITHLAND</b>  | SMITHLAND  | 0.41             |
| <b>TATANKA</b>    | TATANKA    | 1.01             |
| <b>TILTON</b>     | TILTON     | 0.86             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.74             |
| <b>TVA</b>        | TVA        | 4.33             |
| <b>UNIONPOWER</b> | UNIONPOWER | 2.22             |
| <b>VFT</b>        | VFT        | 0.78             |

### 13.6.41 Index 41

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS    | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|-----------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090610 | 934330    | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY | DVP         | 1      | DVP_P1-2: LN 238-B | single | 441.8      | 133.67                | 137.02                 | DC    | 14.81     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.3       |
| 315115 | 1S HAMPT1    | 0.59      |
| 315126 | 1ROARAP2     | 1.2       |
| 315128 | 1ROARAP4     | 1.15      |
| 315136 | 1ROSEMG1     | 3.99      |
| 315137 | 1ROSEMS1     | 2.47      |
| 315138 | 1ROSEMG2     | 1.87      |
| 315139 | 1GASTONA     | 4.78      |
| 315141 | 1GASTONB     | 4.78      |
| 315150 | 1BUGGS 1     | 4.52      |
| 315151 | 1BUGGS 2     | 4.52      |
| 315158 | 1KERR 1      | 0.13      |
| 315159 | 1KERR 2      | 0.55      |
| 315160 | 1KERR 3      | 0.54      |
| 315161 | 1KERR 4      | 0.54      |
| 315162 | 1KERR 5      | 0.54      |
| 315163 | 1KERR 6      | 0.54      |
| 315164 | 1KERR 7      | 0.54      |
| 917331 | Z2-043 C     | 0.12      |
| 918491 | AA1-063AC OP | 0.96      |
| 918511 | AA1-065 C OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 1.11      |
| 920041 | AA2-088 C OP | 0.54      |
| 920671 | AA2-174 C    | 0.05      |
| 923801 | AB2-015 C O1 | 4.25      |
| 923911 | AB2-031 C O1 | 3.11      |
| 923991 | AB2-040 C O1 | 1.24      |
| 924021 | AB2-043 C O1 | 0.18      |
| 924161 | AB2-060 C O1 | 0.5       |
| 924301 | AB2-077 C O1 | 0.11      |
| 924311 | AB2-078 C O1 | 0.11      |
| 924321 | AB2-079 C O1 | 0.11      |
| 924401 | AB2-089 C    | 1.36      |
| 924501 | AB2-099 C    | 0.33      |
| 924511 | AB2-100 C    | 21.77     |
| 925171 | AB2-174 C O1 | 10.05     |
| 925611 | AC1-036 C    | 0.04      |
| 925781 | AC1-054 C O1 | 5.04      |
| 926071 | AC1-086 C    | 44.1      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 930861     | AB1-132 C O1 | 3.65      |
| 931231     | AB1-173 C    | 0.38      |
| 931241     | AB1-173AC    | 0.38      |
| 933991     | AD1-023 C    | 4.49      |
| 934201     | AD1-047 C    | 11.13     |
| 934231     | AD1-050 C    | 3.0       |
| 934331     | AD1-057 C O1 | 37.55     |
| 934521     | AD1-076 C    | 16.11     |
| 936261     | AD2-033 C    | 5.0       |
| 936361     | AD2-046 C O1 | 4.59      |
| 936401     | AD2-051 C O1 | 4.71      |
| 936481     | AD2-063 C O1 | 6.38      |
| 936711     | AD2-090 C O1 | 4.16      |
| 937571     | AD2-169 C    | 13.44     |
| 938171     | AE1-026 C1 O | 10.29     |
| 938172     | AE1-026 C2 O | 1.49      |
| 938221     | AE1-035 C    | 1.06      |
| 938771     | AE1-103 C O1 | 1.63      |
| 939071     | AE1-135 C O1 | 38.52     |
| 939181     | AE1-148 C O1 | 4.5       |
| 939371     | AE1-168 C    | 4.69      |
| 940241     | AE2-006      | 0.18      |
| 940481     | AE2-033 C    | 28.57     |
| 940521     | AE2-037 C O1 | 4.08      |
| 940661     | AE2-053      | 1.67      |
| 941541     | AE2-151 C    | 0.58      |
| 942451     | AE2-258      | 1.09      |
| 942471     | AE2-260 C O1 | 26.54     |
| 942711     | AE2-287 C O1 | 14.81     |
| 943171     | AE2-346 C    | 1.0       |
| BLUEG      | BLUEG        | 3.44      |
| CALDERWOOD | CALDERWOOD   | 0.68      |
| CANNELTON  | CANNELTON    | 0.23      |
| CARR       | CARR         | 0.0       |
| CATAWBA    | CATAWBA      | 0.66      |
| CHEOAH     | CHEOAH       | 0.64      |
| CHILHOWEE  | CHILHOWEE    | 0.22      |
| COFFEEN    | COFFEEN      | 0.4       |
| COTTONWOOD | COTTONWOOD   | 2.3       |
| DUCKCREEK  | DUCKCREEK    | 0.82      |
| EDWARDS    | EDWARDS      | 0.37      |
| ELMERSMITH | ELMERSMITH   | 0.41      |
| FARMERCITY | FARMERCITY   | 0.29      |
| G-007A     | G-007A       | 0.11      |
| GIBSON     | GIBSON       | 0.15      |
| HAMLET     | HAMLET       | 1.33      |
| NEWTON     | NEWTON       | 1.04      |
| PRAIRIE    | PRAIRIE      | 2.16      |
| RENSSELAER | RENSSELAER   | 0.0       |
| SANTEETLA  | SANTEETLA    | 0.19      |
| SMITHLAND  | SMITHLAND    | 0.19      |
| TATANKA    | TATANKA      | 0.49      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TILTON</b>     | TILTON     | 0.44             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.38             |
| <b>TVA</b>        | TVA        | 1.93             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.95             |
| <b>VFT</b>        | VFT        | 0.26             |

### 13.6.42 Index 42

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS  | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|---------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7719986 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 637.0      | 181.28                | 189.17                 | DC    | 50.45     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.24      |
| 314578 | 3HORNRTN     | 3.01      |
| 314704 | 3LAWRENC     | 0.62      |
| 315126 | 1ROARAP2     | 0.97      |
| 315128 | 1ROARAP4     | 0.94      |
| 315139 | 1GASTONA     | 10.52     |
| 315141 | 1GASTONB     | 10.52     |
| 918491 | AA1-063AC OP | 0.77      |
| 918492 | AA1-063AE OP | 2.96      |
| 919691 | AA2-053 C    | 0.9       |
| 919692 | AA2-053 E    | 3.15      |
| 920671 | AA2-174 C    | 0.04      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 5.04      |
| 923912 | AB2-031 E O1 | 2.48      |
| 923991 | AB2-040 C O1 | 2.02      |
| 923992 | AB2-040 E O1 | 13.53     |
| 924021 | AB2-043 C O1 | 0.3       |
| 924022 | AB2-043 E O1 | 4.06      |
| 924161 | AB2-060 C O1 | 0.86      |
| 924162 | AB2-060 E O1 | 3.3       |
| 924301 | AB2-077 C O1 | 0.19      |
| 924302 | AB2-077 E O1 | 1.02      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924312 | AB2-078 E O1 | 1.02      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924322 | AB2-079 E O1 | 1.02      |
| 924401 | AB2-089 C    | 1.6       |
| 924402 | AB2-089 E    | 0.83      |
| 924511 | AB2-100 C    | 52.6      |
| 924512 | AB2-100 E    | 25.91     |
| 925171 | AB2-174 C O1 | 17.74     |
| 925172 | AB2-174 E O1 | 16.05     |
| 925781 | AC1-054 C O1 | 5.59      |
| 925782 | AC1-054 E O1 | 2.58      |
| 926071 | AC1-086 C    | 97.12     |
| 926072 | AC1-086 E    | 44.2      |
| 930861 | AB1-132 C O1 | 8.04      |
| 930862 | AB1-132 E O1 | 28.26     |
| 931231 | AB1-173 C    | 0.62      |
| 931232 | AB1-173 E    | 2.37      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.62      |
| 931242     | AB1-173AE    | 2.37      |
| 934201     | AD1-047 C    | 18.05     |
| 934202     | AD1-047 E    | 12.03     |
| 934231     | AD1-050 C    | 3.53      |
| 934232     | AD1-050 E    | 1.93      |
| 936361     | AD2-046 C O1 | 6.38      |
| 936362     | AD2-046 E O1 | 2.93      |
| 936481     | AD2-063 C O1 | 10.79     |
| 936482     | AD2-063 E O1 | 7.19      |
| 937571     | AD2-169 C    | 19.53     |
| 937572     | AD2-169 E    | 13.02     |
| 939071     | AE1-135 C O1 | 94.21     |
| 939072     | AE1-135 E O1 | 62.81     |
| 939181     | AE1-148 C O1 | 6.33      |
| 939182     | AE1-148 E O1 | 4.22      |
| 940481     | AE2-033 C    | 76.89     |
| 940482     | AE2-033 E    | 51.84     |
| 940542     | AE2-040 BAT  | 2.16      |
| 940661     | AE2-053      | 2.36      |
| 942451     | AE2-258      | 1.85      |
| 942471     | AE2-260 C O1 | 64.93     |
| 942472     | AE2-260 E O1 | 92.09     |
| 942711     | AE2-287 C O1 | 30.27     |
| 942712     | AE2-287 E O1 | 20.18     |
| CARR       | CARR         | 0.13      |
| CBM-S1     | CBM-S1       | 1.42      |
| CBM-S2     | CBM-S2       | 1.84      |
| CBM-W1     | CBM-W1       | 1.17      |
| CBM-W2     | CBM-W2       | 8.98      |
| CIN        | CIN          | 0.55      |
| CPL        | CPL          | 1.02      |
| G-007      | G-007        | 0.43      |
| IPL        | IPL          | 0.34      |
| LGEE       | LGEE         | 0.16      |
| MEC        | MEC          | 1.3       |
| MECS       | MECS         | 0.38      |
| O-066      | O-066        | 2.72      |
| RENSSELAER | RENSSELAER   | 0.1       |
| WEC        | WEC          | 0.15      |

## Affected Systems

## 13.7 Affected Systems

### 13.7.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

### 13.7.2 MISO

MISO Impacts to be determined during later study phases (as applicable).

### 13.7.3 TVA

TVA Impacts to be determined during later study phases (as applicable).

### 13.7.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

### 13.7.5 NYISO

NYISO Impacts to be determined during later study phases (as applicable).

## 13.8 Contingency Descriptions

| Contingency Name        | Contingency Definition                                                                                                                                                                                                                                                           |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P1-2: LN 563        | CONTINGENCY 'DVP_P1-2: LN 563'<br>OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 – 8MDLTHAN 500.00<br>END                                                                                                                                                     |
| DVP_P1-3: 6CAROLNA-TX#4 | CONTINGENCY 'DVP_P1-3: 6CAROLNA-TX#4'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 – 6CAROLNA 230.00<br>END                                                                                                                                             |
| DVP_P1-2: LN 2092       | CONTINGENCY 'DVP_P1-2: LN 2092'<br>OPEN BRANCH FROM BUS 313714 TO BUS 314662 CKT 1 /* 6PERQUIMANS 230.00 – 6S HERTFORD 230.00<br>OPEN BRANCH FROM BUS 314651 TO BUS 314662 CKT 1 /* 6WINFALL 230.00 – 6S HERTFORD 230.00<br>OPEN BUS 314662 /* ISLAND: 6S HERTFORD 230.00<br>END |

| Contingency Name            | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P7-1: LN 22-90-A</b> | CONTINGENCY 'DVP_P7-1: LN 22-90-A'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 – 3EATON F 115.00<br>OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 – AC1-054 TAP 115.00<br>OPEN BUS 314571 /* ISLAND: 3EATON F 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 – 3LITTLTN 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 – 3PALMERSPRNG115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 – 3L GASTN 115.00<br>OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 – 3L GASTN 115.00<br>OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00<br>OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00<br>OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00<br>END |
| <b>DVP_P4-2: 562T563</b>    | CONTINGENCY 'DVP_P4-2: 562T563' /* CARSON 500 KV<br>OPEN BRANCH FROM BUS 314902 TO BUS 941030 CKT 1 /* 8CARSON 500.00 – AE2-094 TAP 500.00 /* CONTINGENCY LINE ADDED FOR AE2 BUILD<br>OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 – 8MDLTHAN 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>DVP_P1-2: LN 2012</b>    | CONTINGENCY 'DVP_P1-2: LN 2012'<br>OPEN BRANCH FROM BUS 314266 TO BUS 314569 CKT 1 /* 6NORTHAMPTON230.00 – 6EARLEYS 230.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314599 CKT 1 /* 6NORTHAMPTON230.00 – 6ROA VAL 230.00<br>OPEN BUS 314266 /* ISLAND: 6NORTHAMPTON230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>DVP_P1-2: LN 130-A</b>   | CONTINGENCY 'DVP_P1-2: LN 130-A'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 – 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 – 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314600 TO BUS 937570 CKT 1 /* 3PLHITP 115.00 – AD2-169 TAP 115.00<br>OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00<br>OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00<br>END                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>DVP_P1-2: LN 91-B</b>    | CONTINGENCY 'DVP_P1-2: LN 91-B'<br>OPEN BRANCH FROM BUS 941010 TO BUS 314774 CKT 1 /* AE2-092 TAP 115.00 – 3SHERWOD 115.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Contingency Name              | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P1-2: LN 235-A-A</b>   | CONTINGENCY 'DVP_P1-2: LN 235-A-A'<br>OPEN BRANCH FROM BUS 313802 TO BUS 314268 CKT 1 /* 6PRINCE EDW 230.00 – 6BRIERY 230.00<br>OPEN BRANCH FROM BUS 313802 TO BUS 314692 CKT 1 /* 6PRINCE EDW 230.00 – 6FARMVIL 230.00<br>OPEN BRANCH FROM BUS 314268 TO BUS 943050 CKT 1 /* 6BRIERY 230.00 – AE2-328 TAP 230.00<br>OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 – 6FARMVIL 230.00<br>OPEN BUS 313802 /* ISLAND: 6PRINCE EDW 230.00<br>OPEN BUS 314268 /* ISLAND: 6BRIERY 230.00<br>END |
| <b>DVP_P1-2: LN 33-B</b>      | CONTINGENCY 'DVP_P1-2: LN 33-B'<br>OPEN BRANCH FROM BUS 926270 TO BUS 314696 CKT 1 /* AC1-105 TAP 115.00 – 3SEDGE HILL 115.00<br>END                                                                                                                                                                                                                                                                                                                                                                           |
| <b>DVP_P7-1: LN 2058-2181</b> | CONTINGENCY 'DVP_P7-1: LN 2058-2181'<br>OPEN BRANCH FROM BUS 304222 TO BUS 313845 CKT 1 /* 6ROCKYMT230T230.00 – 6HATHAWAY 230.00<br>OPEN BUS 304226 /* ISLAND: 6PA-RMOUNT#4115.00<br>OPEN BRANCH FROM BUS 304226 TO BUS 314591 CKT 1 /* 6PA-RMOUNT#4230.00 – 6NASH 230.00<br>OPEN BRANCH FROM BUS 313845 TO BUS 314591 CKT 1 /* 6HATHAWAY 230.00 – 6NASH 230.00<br>OPEN BUS 314591 /* ISLAND: 6NASH 230.00<br>END                                                                                              |
| <b>DVP_P1-2: LN 296-B</b>     | CONTINGENCY 'DVP_P1-2: LN 296-B'<br>OPEN BRANCH FROM BUS 927250 TO BUS 314697 CKT 1 /* AC1-221 TAP T230.00 – 6SEDGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                         |
| <b>DVP_P7-1: LN 56-2060</b>   | CONTINGENCY 'DVP_P7-1: LN 56-2060'<br>OPEN BRANCH FROM BUS 314259 TO BUS 314604 CKT 1 /* 3CAROL56_1 115.00 – 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314558 TO BUS 314587 CKT 1 /* 3BOYKINS 115.00 – 3MARGTSV 115.00<br>OPEN BRANCH FROM BUS 314587 TO BUS 314604 CKT 1 /* 3MARGTSV 115.00 – 3SEABORD 115.00<br>OPEN BUS 314587 /* ISLAND: 3MARGTSV 115.00<br>OPEN BUS 314604 /* ISLAND: 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314561 TO BUS 314599 CKT 1 /* 6CAROLNA 230.00 – 6ROA VAL 230.00<br>END        |
| <b>DVP_P4-2: 201262</b>       | CONTINGENCY 'DVP_P4-2: 201262' /* EARLEYS 230 KV<br>OPEN BRANCH FROM BUS 314266 TO BUS 314569 CKT 1 /* 6NORTHAMPTON230.00 – 6EARLEYS 230.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314599 CKT 1 /* 6NORTHAMPTON230.00 – 6ROA VAL 230.00<br>OPEN BUS 314266 /* ISLAND: 6NORTHAMPTON230.00<br>OPEN BRANCH FROM BUS 314568 TO BUS 314569 CKT 1 /* 3EARLEYS 115.00 – 6EARLEYS 230.00<br>END                                                                                                                         |

| Contingency Name                   | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P1-2: LN 1001</b>           | CONTINGENCY 'DVP_P1-2: LN 1001'<br>OPEN BRANCH FROM BUS 313719 TO BUS 314623 CKT 1 /* 3CHESTNUT 115.00 – 3WITAKRS 115.00<br>OPEN BRANCH FROM BUS 313854 TO BUS 314554 CKT 1 /* 3CONSLDL 115.00 – 3BTLEBRO 115.00<br>OPEN BRANCH FROM BUS 313854 TO BUS 314623 CKT 1 /* 3CONSLDL 115.00 – 3WITAKRS 115.00<br>OPEN BUS 313854 /* ISLAND: 3CONSLDL 115.00<br>OPEN BUS 314623 /* ISLAND: 3WITAKRS 115.00<br>OPEN BUS 917341 /* ISLAND: Z2-044 C 115.00<br>OPEN BUS 917342 /* ISLAND: Z2-044 E 115.00<br>END                                                                                                                                                                                               |
| <b>DVP_P1-2: LN 45</b>             | CONTINGENCY 'DVP_P1-2: LN 45'<br>OPEN BUS 304099 /* ISLAND: 3WARREN TAP 115.00<br>OPEN BUS 304100 /* ISLAND: 3HEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>DVP_P1-3: 6SEEDGE HILL-TX#1</b> | CONTINGENCY 'DVP_P1-3: 6SEEDGE HILL-TX#1'<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 1 /* 3SEEDGE HILL 115.00 – 6SEEDGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DVP_P1-3: 6SEEDGE HILL-TX#2</b> | CONTINGENCY 'DVP_P1-3: 6SEEDGE HILL-TX#2'<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEEDGE HILL 115.00 – 6SEEDGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DVP_P4-2: H1T2068</b>           | CONTINGENCY 'DVP_P4-2: H1T2068' /* SEDGE HILL 230 KV<br>OPEN BRANCH FROM BUS 934610 TO BUS 314697 CKT 1 /* AD1-087 TAP 230.00 – 6SEEDGE HILL 230.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 1 /* 3SEEDGE HILL 115.00 – 6SEEDGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>DVP_P1-2: LN 238-B</b>          | CONTINGENCY 'DVP_P1-2: LN 238-B'<br>OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 – 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314435 TO BUS 940480 CKT 1 /* 6SAPONY 230.00 – AE2-033 TAP 230.00<br>OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>DVP_P4-2: 2202</b>              | CONTINGENCY 'DVP_P4-2: 2202' /* CAROLINA 115 KV<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 – 3EATON F 115.00<br>OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 – AC1-054 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BUS 314571 /* ISLAND: 3EATON F 115.00<br>OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE 115.00 – 3CAROLNA 115.00<br>OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 – 3CAROLNA 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 – 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 – 6CAROLNA 230.00<br>END |

| Contingency Name       | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P4-2: 511T591      | CONTINGENCY 'DVP_P4-2: 511T591' /* RAWLINGS 500 KV<br>OPEN BRANCH FROM BUS 942930 TO BUS 314936 CKT 1 /* AE2-313 TAP 500.00 – 8RAWLINGS 500.00<br>OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 – 8RAWLINGS 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| DVP_P4-2: 205602       | CONTINGENCY 'DVP_P4-2: 205602' /* HATHAWAY 230 KV<br>OPEN BRANCH FROM BUS 313845 TO BUS 934330 CKT 1 /* 6HATHAWAY 230.00 – AD1-057 TAP 230.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 313844 TO BUS 313845 CKT 1 /* 3HATHAWAY 115.00 – 6HATHAWAY 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DVP_P1-2: LN 6002_FSA  | CONTINGENCY 'DVP_P1-2: LN 6002_FSA'<br>OPEN BRANCH FROM BUS 314935 TO BUS 918500 CKT 1 /* 8HERITAGE 500.00 – AA1-064 TAP 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DVP_P1-2: LN 2056-A    | CONTINGENCY 'DVP_P1-2: LN 2056-A'<br>OPEN BRANCH FROM BUS 313845 TO BUS 934330 CKT 1 /* 6HATHAWAY 230.00 – AD1-057 TAP 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DVP_P1-2: LN 2056-B    | CONTINGENCY 'DVP_P1-2: LN 2056-B'<br>OPEN BRANCH FROM BUS 934330 TO BUS 314579 CKT 1 /* AD1-057 TAP 230.00 – 6HORNRTN 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DVP_P4-6: CAROLIN T122 | CONTINGENCY 'DVP_P4-6: CAROLIN T122' /* CAROLINA 115 KV<br>OPEN BRANCH FROM BUS 314559 TO BUS 315126 CKT 1 /* 3CAROLNA 115.00 – 1ROARAP2 14.400<br>OPEN BRANCH FROM BUS 314559 TO BUS 315128 CKT 1 /* 3CAROLNA 115.00 – 1ROARAP4 14.400<br>OPEN BUS 315126 /* ISLAND: 1ROARAP2 14.400<br>OPEN BUS 315128 /* ISLAND: 1ROARAP4 14.400<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 – 3EATON F 115.00<br>OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 – 3CAROLNA 115.00<br>OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 – 3CAROLNA 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314578 CKT 1 /* 3CAROLNA 115.00 – 3HORNRTN 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 – 3L GASTN 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 – 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 – 6CAROLNA 230.00<br>OPEN BUS 314559 /* 3CAROLNA 115.00 KV<br>END |

| Contingency Name   | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P1-2: LN 557   | CONTINGENCY 'DVP_P1-2: LN 557'<br>OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 – 8CHCKAHM 500.00<br>OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 – 8ELMONT 500.00<br>END                                                                                                                                                                                                                                                                          |
| DVP_P1-2: LN 556   | CONTINGENCY 'DVP_P1-2: LN 556'<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 – 8RAWLINGS 500.00<br>OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00<br>OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00<br>END |
| DVP_P1-2: LN 296-A | CONTINGENCY 'DVP_P1-2: LN 296-A'<br>OPEN BRANCH FROM BUS 304070 TO BUS 927250 CKT 1 /* 6PERSON230 T230.00 – AC1-221 TAP 230.00<br>END                                                                                                                                                                                                                                                                                                                                                         |
| DVP_P1-2: LN 217   | CONTINGENCY 'DVP_P1-2: LN 217'<br>OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY 230.00 – 6LAKESIDE 230.00<br>OPEN BRANCH FROM BUS 314225 TO BUS 314287 CKT 1 /* 6CHARCTY 230.00 – 6CHESTF B 230.00<br>OPEN BUS 314225 /* ISLAND: 6CHARCTY 230.00<br>END                                                                                                                                                                                                                         |
| DVP_P1-2: LN 84    | CONTINGENCY 'DVP_P1-2: LN 84'<br>OPEN BRANCH FROM BUS 314521 TO BUS 314713 CKT 1 /* 3PAMPL_1 115.00 – 3PAMPLIN 115.00<br>OPEN BRANCH FROM BUS 314691 TO BUS 314726 CKT 1 /* 3FARMVIL 115.00 – 3WILLIS 115.00<br>OPEN BRANCH FROM BUS 314713 TO BUS 314726 CKT 1 /* 3PAMPLIN 115.00 – 3WILLIS 115.00<br>OPEN BUS 314521 /* ISLAND: 3PAMPL_1 115.00<br>OPEN BUS 314726 /* ISLAND: 3WILLIS 115.00<br>END                                                                                         |
| DVP_P4-2: 23872    | CONTINGENCY 'DVP_P4-2: 23872' /* CARSON 230 KV<br>OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 – 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314435 TO BUS 940480 CKT 1 /* 6SAPONY 230.00 – AE2-033 TAP 230.00 /* CONTINGENCY LINE ADDED FOR AE2 BUILD<br>OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 – 8CARSON 500.00<br>OPEN BUS 314455 /* 6CARSO_1 230.00 KV<br>END                                     |

| Contingency Name        | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P4-2: 556T591       | CONTINGENCY 'DVP_P4-2: 556T591' /* RAWLINGS 500 KV<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 – 8RAWLINGS<br>500.00<br>OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00<br>OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00<br>OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 – 8RAWLINGS<br>500.00<br>END                                                |
| DVP_P7-1: LN 22-90-B    | CONTINGENCY 'DVP_P7-1: LN 22-90-B'<br>OPEN BRANCH FROM BUS 925780 TO BUS 314702 CKT 1 /* AC1-054 TAP 115.00 – 3KERR 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 – 3LITTLTN<br>115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 –<br>3PALMERSPRNG115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 – 3L GASTN<br>115.00<br>OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 – 3L GASTN 115.00<br>OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00<br>OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00<br>OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00<br>END |
| DVP_P1-3: 6FARMVIL-TX#4 | CONTINGENCY 'DVP_P1-3: 6FARMVIL-TX#4'<br>OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 – 6FARMVIL<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DVP_P1-3: 6FARMVIL-TX#5 | CONTINGENCY 'DVP_P1-3: 6FARMVIL-TX#5'<br>OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 2 /* 3FARMVIL 115.00 – 6FARMVIL<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Contingency Name   | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P4-2: 102952   | CONTINGENCY 'DVP_P4-2: 102952' /* CLUBHOUSE 115 KV<br>OPEN BRANCH FROM BUS 314312 TO BUS 314325 CKT 1 /* 3JARRATT 115.00 – 3PURDYSW 115.00<br>OPEN BRANCH FROM BUS 314325 TO BUS 314562 CKT 1 /* 3PURDYSW 115.00 – 3CLUBHSE 115.00<br>OPEN BUS 314312 /* ISLAND: 3JARRATT 115.00<br>OPEN BUS 314325 /* ISLAND: 3PURDYSW 115.00<br>OPEN BRANCH FROM BUS 314562 TO BUS 314570 CKT 1 /* 3CLUBHSE 115.00 – 3METCATP 115.00<br>OPEN BRANCH FROM BUS 314570 TO BUS 314572 CKT 1 /* 3METCATP 115.00 – 3EMPORIA 115.00<br>OPEN BRANCH FROM BUS 314570 TO BUS 314588 CKT 1 /* 3METCATP 115.00 – 3METCALF 115.00<br>OPEN BRANCH FROM BUS 314572 TO BUS 925170 CKT 1 /* 3EMPORIA 115.00 – AB2-174 TAP 115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 314572 TO BUS 314863 CKT 1 /* 3EMPORIA 115.00 – 3EMPOR_1 115.00<br>OPEN BUS 314570 /* ISLAND: 3METCATP 115.00<br>OPEN BUS 314572 /* ISLAND: 3EMPORIA 115.00<br>OPEN BUS 314588 /* ISLAND: 3METCALF 115.00<br>OPEN BUS 314863 /* ISLAND: 3EMPOR_1 115.00<br>OPEN BRANCH FROM BUS 314562 TO BUS 314565 CKT Z1 /* 3CLUBHSE 115.00 – 3CLUBHSE71 115.00<br>OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 – 6CLUBHSE 230.00<br>OPEN BUS 314562 /* 3CLUBHSE 115.00 KV<br>END |
| DVP_P4-2: 239T2141 | CONTINGENCY 'DVP_P4-2: 239T2141' /* LAKEVIEW 230 KV<br>OPEN BRANCH FROM BUS 314579 TO BUS 314583 CKT 1 /* 6HORNRTN 230.00 – 6LAKEVEW 230.00<br>OPEN BRANCH FROM BUS 314561 TO BUS 314583 CKT 1 /* 6CAROLNA 230.00 – 6LAKEVEW 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Base Case          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DVP_P1-2: LN 239   | CONTINGENCY 'DVP_P1-2: LN 239'<br>OPEN BRANCH FROM BUS 314579 TO BUS 314583 CKT 1 /* 6HORNRTN 230.00 – 6LAKEVEW 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| DVP_P1-2: LN 2060  | CONTINGENCY 'DVP_P1-2: LN 2060'<br>OPEN BRANCH FROM BUS 314561 TO BUS 314599 CKT 1 /* 6CAROLNA 230.00 – 6ROA VAL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Contingency Name            | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P7-1: LN 56-2012</b> | CONTINGENCY 'DVP_P7-1: LN 56-2012'<br>OPEN BRANCH FROM BUS 314259 TO BUS 314604 CKT 1 /* 3CAROL56_1 115.00 – 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314558 TO BUS 314587 CKT 1 /* 3BOYKINS 115.00 – 3MARGTSV 115.00<br>OPEN BRANCH FROM BUS 314587 TO BUS 314604 CKT 1 /* 3MARGTSV 115.00 – 3SEABORD 115.00<br>OPEN BUS 314587 /* ISLAND: 3MARGTSV 115.00<br>OPEN BUS 314604 /* ISLAND: 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314569 CKT 1 /* 6NORTHAMPTON230.00 – 6GEARLEYS 230.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314599 CKT 1 /* 6NORTHAMPTON230.00 – 6ROA VAL 230.00<br>OPEN BUS 314266 /* ISLAND: 6NORTHAMPTON230.00<br>END |
| <b>DVP_P1-2: LN 2058</b>    | CONTINGENCY 'DVP_P1-2: LN 2058'<br>OPEN BRANCH FROM BUS 304222 TO BUS 313845 CKT 1 /* 6ROCKYMT230T230.00 – 6HATHAWAY 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DVP_P4-2: 511T556</b>    | CONTINGENCY 'DVP_P4-2: 511T556' /* RAWLINGS 500 KV<br>OPEN BRANCH FROM BUS 942930 TO BUS 314936 CKT 1 /* AE2-313 TAP 500.00 – 8RAWLINGS 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 – 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 – 8RAWLINGS 500.00<br>OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00<br>OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00<br>END                                           |
| <b>DVP_P4-2: H2T2068</b>    | CONTINGENCY 'DVP_P4-2: H2T2068' /* SEDGE HILL 230 KV<br>OPEN BRANCH FROM BUS 934610 TO BUS 314697 CKT 1 /* AD1-087 TAP 230.00 – 6SEGE HILL 230.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEGE HILL 115.00 – 6SEGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                            |
| <b>DVP_P1-2: LN 2181</b>    | CONTINGENCY 'DVP_P1-2: LN 2181'<br>OPEN BUS 304226 /* ISLAND: 6PA-RMOUNT#4115.00<br>OPEN BRANCH FROM BUS 304226 TO BUS 314591 CKT 1 /* 6PA-RMOUNT#4230.00 – 6NASH 230.00<br>OPEN BRANCH FROM BUS 313845 TO BUS 314591 CKT 1 /* 6HATHAWAY 230.00 – 6NASH 230.00<br>OPEN BUS 314591 /* ISLAND: 6NASH 230.00<br>END                                                                                                                                                                                                                                                                                                                                        |
| <b>DVP_P1-2: LN 238-A</b>   | CONTINGENCY 'DVP_P1-2: LN 238-A'<br>OPEN BRANCH FROM BUS 940480 TO BUS 314563 CKT 1 /* AE2-033 TAP 230.00 – 6CLUBHSE 230.00<br>OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 – 6CLUBHSE 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Contingency Name               | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P4-2: 24972-4</b>       | CONTINGENCY 'DVP_P4-2: 24972-4' /* CARSON 230 KV<br>OPEN BRANCH FROM BUS 314282 TO BUS 314285 CKT 1 /* 6CARSON 230.00 – 6CHRL249 230.00<br>OPEN BRANCH FROM BUS 314285 TO BUS 314316 CKT 1 /* 6CHRL249 230.00 – 6LOCKS 230.00<br>OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 2 /* 3LOCKS 115.00 – 6LOCKS 230.00<br>OPEN BUS 314285 /* ISLAND: 6CHRL249 230.00<br>OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 – 8CARSON 500.00<br>OPEN BUS 314455 /* 6CARSO_1 230.00 KV<br>END                                                                                                                                                                                                                                                                                                              |
| <b>DVP_P4-2: 238T2002</b>      | CONTINGENCY 'DVP_P4-2: 238T2002' /* CARSON 230 KV<br>OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 – 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314435 TO BUS 940480 CKT 1 /* 6SAPONY 230.00 – AE2-033 TAP<br>230.00 /* CONTINGENCY LINE ADDED FOR AE2 BUILD<br>OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314282 TO BUS 314331 CKT 1 /* 6CARSON 230.00 – 6POE 230.00<br>OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 1 /* 3POE 115.00 – 6POE 230.00<br>END                                                                                                                                                                                                                                                                                                                |
| <b>DVP_P1-2: LN 2131</b>       | CONTINGENCY 'DVP_P1-2: LN 2131'<br>OPEN BRANCH FROM BUS 313714 TO BUS 313885 CKT 1 /* 6PERQUIMANS 230.00 – 6WALBMRL<br>230.00<br>OPEN BRANCH FROM BUS 313885 TO BUS 314637 CKT 1 /* 6WALBMRL 230.00 – 6EDENTON<br>230.00<br>OPEN BRANCH FROM BUS 314203 TO BUS 314637 CKT 1 /* 6MACKEYS 230.00 – 6EDENTON<br>230.00<br>OPEN BUS 313885 /* ISLAND: 6WALBMRL 230.00<br>OPEN BUS 314637 /* ISLAND: 6EDENTON 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>DVP_P1-3: 6CLUBHSE-TX#1</b> | CONTINGENCY 'DVP_P1-3: 6CLUBHSE-TX#1'<br>OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 – 6CLUBHSE<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>DVP_P1-2: LN 218-A</b>      | CONTINGENCY 'DVP_P1-2: LN 218-A'<br>OPEN BRANCH FROM BUS 304451 TO BUS 936530 CKT 1 /* 6GREENVILLE T230.00 – AD2-068 TAP<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>DVP_P4-2: 3202</b>          | CONTINGENCY 'DVP_P4-2: 3202' /* SEDGE HILL 115 KV<br>OPEN BRANCH FROM BUS 313852 TO BUS 314716 CKT 1 /* 3WELCOTAP 115.00 – 3REEDY C<br>115.00<br>OPEN BRANCH FROM BUS 313852 TO BUS 314718 CKT 1 /* 3WELCOTAP 115.00 – 3S BOSTN<br>115.00<br>OPEN BRANCH FROM BUS 313852 TO BUS 314724 CKT 1 /* 3WELCOTAP 115.00 – 3WELCO<br>115.00<br>OPEN BRANCH FROM BUS 314696 TO BUS 314717 CKT 1 /* 3SEEDGE HILL 115.00 – 3SINAI 115.00<br>OPEN BRANCH FROM BUS 314717 TO BUS 314718 CKT 1 /* 3SINAI 115.00 – 3S BOSTN 115.00<br>OPEN BUS 313852 /* ISLAND: 3WELCOTAP 115.00<br>OPEN BUS 314717 /* ISLAND: 3SINAI 115.00<br>OPEN BUS 314718 /* ISLAND: 3S BOSTN 115.00<br>OPEN BUS 314724 /* ISLAND: 3WELCO 115.00<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 1 /* 3SEEDGE HILL 115.00 – 6SEEDGE HILL<br>230.00<br>END |

## Short Circuit

### 13.9 Short Circuit

The following Breakers are overduty:

None

## **14 Network Impacts – Secondary Point of Interconnection**

The Queue Project AE2-287 was evaluated as a 130.0 MW (Capacity 78.0 MW) injection tapping the Brunswick to Broadnax 115kV line in the Dominion area. Project AE2-287 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE2-287 was studied with a commercial probability of 53%. Potential network impacts were as follows:

## Summer Peak Load Flow

## 14.1 Generation Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091217 | 313825    | 3PLYWOOD | DVP           | 314696  | 3SEEDGE HILL | DVP         | 1      | DVP_P1-2: LN 33-B  | single | 141.0      | 95.13                 | 100.06                 | DC    | 6.96      |
| 8091179 | 314299    | 6HARROWG | DVP           | 314263  | 6TYLER1      | DVP         | 1      | DVP_P1-2: LN 563   | single | 441.8      | 99.71                 | 101.05                 | DC    | 5.96      |
| 8091176 | 314331    | 6POE     | DVP           | 314299  | 6HARROWG     | DVP         | 1      | DVP_P1-2: LN 563   | single | 441.8      | 99.73                 | 101.07                 | DC    | 5.96      |
| 8090685 | 314435    | 6SAPONY  | DVP           | 314282  | 6CARSON      | DVP         | 1      | Base Case          | single | 678.68     | 96.57                 | 100.02                 | DC    | 23.55     |
| 8090539 | 314559    | 3CAROLNA | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-2: LN 1001  | single | 239.89     | 97.37                 | 100.22                 | DC    | 6.85      |
| 8091041 | 314561    | 6CAROLNA | DVP           | 314599  | 6ROA VAL     | DVP         | 1      | DVP_P1-2: LN 238-B | single | 548.02     | 98.03                 | 100.73                 | DC    | 14.9      |
| 8091047 | 314599    | 6ROA VAL | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P1-2: LN 238-B | single | 548.02     | 97.98                 | 100.67                 | DC    | 14.9      |
| 8090825 | 314677    | 6BUCKING | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P1-2: LN 563   | single | 571.52     | 98.82                 | 100.49                 | DC    | 9.52      |
| 8090842 | 314692    | 6FARMVIL | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P1-2: LN 563   | single | 559.3      | 97.52                 | 99.22                  | DC    | 9.53      |
| 8090501 | 314712    | 3OTTER R | DVP           | 314666  | 3ALTVSTA     | DVP         | 1      | DVP_P1-2: LN 296-A | single | 224.66     | 79.62                 | 81.41                  | DC    | 4.02      |
| 8090503 | 314712    | 3OTTER R | DVP           | 314666  | 3ALTVSTA     | DVP         | 1      | DVP_P1-2: LN 296-B | single | 224.66     | 74.73                 | 76.52                  | DC    | 4.02      |
| 8090781 | 314747    | 6BREMO   | DVP           | 313867  | 6BREMIST     | DVP         | 1      | DVP_P1-2: LN 91-B  | single | 661.76     | 99.54                 | 100.49                 | DC    | 6.26      |

## 14.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME         | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|-------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720432 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 1      | DVP_P4-2: H2T2068 | breaker | 264.5      | 94.14                 | 96.39                  | DC    | 13.21     |
| 7720473 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2      | DVP_P4-2: 3202    | breaker | 279.1      | 90.37                 | 92.75                  | DC    | 14.77     |
| 7720474 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2      | DVP_P4-2: H1T2068 | breaker | 279.1      | 88.98                 | 91.11                  | DC    | 13.17     |

## 14.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME               | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC/DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|-------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7363460 | 242631    | 05EDAN 1     | AEP           | 242620  | 05DANVL2     | AEP         | 1      | AEP_P1-2_#1377          | single  | 402.0      | 114.25                | 114.55                 | DC    | 4.54      |
| 8091216 | 313825    | 3PLYWOOD     | DVP           | 314696  | 3SEGE HILL   | DVP         | 1      | DVP_P1-2: LN 45         | single  | 141.0      | 100.73                | 104.73                 | DC    | 5.64      |
| 8090455 | 313845    | 6HATHAWAY    | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 2181       | single  | 374.0      | 147.83                | 149.49                 | DC    | 6.22      |
| 8090460 | 313845    | 6HATHAWAY    | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 218-A      | single  | 374.0      | 104.47                | 105.54                 | DC    | 3.98      |
| 8090698 | 313845    | 6HATHAWAY    | DVP           | 314591  | 6NASH        | DVP         | 1      | DVP_P1-2: LN 2058       | single  | 449.32     | 132.2                 | 133.61                 | DC    | 6.34      |
| 8090807 | 313867    | 6BREMODIST   | DVP           | 314765  | 6MTEAGLE     | DVP         | 1      | DVP_P1-2: LN 556        | single  | 661.76     | 105.72                | 106.74                 | DC    | 6.74      |
| 7720530 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS     | DVP         | 1      | DVP_P4-2: 23872         | breaker | 658.0      | 111.68                | 113.38                 | DC    | 24.85     |
| 7720531 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS     | DVP         | 1      | DVP_P4-2: 23872002      | breaker | 658.0      | 111.49                | 113.19                 | DC    | 24.84     |
| 7720611 | 314282    | 6CARSON      | DVP           | 314331  | 6POE         | DVP         | 1      | DVP_P4-2: 24972-4       | breaker | 830.0      | 112.77                | 116.43                 | DC    | 30.32     |
| 8090926 | 314282    | 6CARSON      | DVP           | 314285  | 6CHRL249     | DVP         | 1      | DVP_P1-2: LN 563        | single  | 559.3      | 125.0                 | 126.21                 | DC    | 8.07      |
| 8091007 | 314285    | 6CHRL249     | DVP           | 314316  | 6LOCKS       | DVP         | 1      | DVP_P1-2: LN 563        | single  | 559.3      | 121.33                | 122.54                 | DC    | 8.07      |
| 7720119 | 314287    | 6CHESTF B    | DVP           | 314276  | 6BASIN       | DVP         | 1      | DVP_P4-2: H8T217        | breaker | 549.0      | 163.0                 | 163.74                 | DC    | 9.02      |
| 8090289 | 314287    | 6CHESTF B    | DVP           | 314276  | 6BASIN       | DVP         | 1      | DVP_P1-2: LN 563        | single  | 449.32     | 159.05                | 159.58                 | DC    | 5.34      |
| 8090290 | 314287    | 6CHESTF B    | DVP           | 314276  | 6BASIN       | DVP         | 1      | DVP_P1-2: LN 217        | single  | 449.32     | 161.73                | 162.93                 | DC    | 5.42      |
| 7720319 | 314299    | 6HARROWG     | DVP           | 314263  | 6TYLER1      | DVP         | 1      | DVP_P4-2: 24972-4       | breaker | 541.0      | 144.23                | 148.55                 | DC    | 23.37     |
| 7720320 | 314299    | 6HARROWG     | DVP           | 314263  | 6TYLER1      | DVP         | 1      | DVP_P4-2: 562T563       | breaker | 541.0      | 101.93                | 102.75                 | DC    | 9.93      |
| 7720317 | 314331    | 6POE         | DVP           | 314299  | 6HARROWG     | DVP         | 1      | DVP_P4-2: 24972-4       | breaker | 541.0      | 144.25                | 148.57                 | DC    | 23.37     |
| 7720318 | 314331    | 6POE         | DVP           | 314299  | 6HARROWG     | DVP         | 1      | DVP_P4-2: 562T563       | breaker | 541.0      | 101.94                | 102.77                 | DC    | 9.93      |
| 7720267 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P4-2: 239T2141      | breaker | 830.0      | 142.17                | 148.01                 | DC    | 49.7      |
| 7720268 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P4-2: 201262        | breaker | 830.0      | 132.31                | 137.52                 | DC    | 43.27     |
| 8090680 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P1-2: LN 2060       | single  | 678.68     | 105.92                | 109.7                  | DC    | 25.8      |
| 8090682 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P1-2: LN 2056-A     | single  | 678.68     | 108.11                | 111.85                 | DC    | 25.82     |
| 8242047 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P7-1: LN 56-2060    | tower   | 830.0      | 134.3                 | 139.7                  | DC    | 44.78     |
| 8242050 | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P7-1: LN 2058-2181  | tower   | 830.0      | 139.45                | 144.39                 | DC    | 40.97     |
| 8090536 | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-3: 6CLUBHSE-TX#1 | single  | 239.89     | 115.51                | 123.78                 | DC    | 19.84     |
| 7720548 | 314561    | 6CAROLNA     | DVP           | 314599  | 6ROA VAL     | DVP         | 1      | DVP_P4-2: 23872         | breaker | 671.0      | 110.21                | 111.88                 | DC    | 24.85     |
| 7720549 | 314561    | 6CAROLNA     | DVP           | 314599  | 6ROA VAL     | DVP         | 1      | DVP_P4-2: 23872002      | breaker | 671.0      | 110.03                | 111.69                 | DC    | 24.84     |
| 7719964 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P4-6: CAROLIN T122  | breaker | 208.6      | 232.95                | 267.1                  | DC    | 71.24     |
| 7719965 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P4-2: 2202          | breaker | 208.6      | 228.2                 | 262.09                 | DC    | 70.68     |
| 8090192 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P1-2: LN 130-A      | single  | 182.64     | 149.64                | 172.69                 | DC    | 42.1      |
| 8090193 | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P1-3: 6CAROLNA-TX#4 | single  | 182.64     | 140.84                | 159.34                 | DC    | 33.79     |

| ID        | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME               | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC/DC | MW IMPACT |
|-----------|-----------|----------|---------------|---------|--------------|-------------|--------|-------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 8090197   | 31456 2   | 3CLUBHSE | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | Base Case               | single  | 176.81     | 109.56                | 127.75                 | DC    | 32.15     |
| 7720045   | 31456 3   | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P4-2: 239T2141      | breaker | 637.0      | 169.69                | 177.46                 | DC    | 49.71     |
| 8090520   | 31456 3   | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P1-2: LN 2056-A     | single  | 598.78     | 114.41                | 118.66                 | DC    | 25.83     |
| 8090521   | 31456 3   | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P1-2: LN 2056-B     | single  | 598.78     | 115.1                 | 119.34                 | DC    | 25.83     |
| 8090525   | 31456 3   | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | Base Case               | single  | 598.78     | 106.59                | 110.48                 | DC    | 23.55     |
| 8241959   | 31456 3   | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P7-1: LN 2058-2181  | tower   | 637.0      | 167.35                | 173.78                 | DC    | 40.98     |
| 8241960   | 31456 3   | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP  | DVP         | 1      | DVP_P7-1: LN 56-2060    | tower   | 637.0      | 161.58                | 168.62                 | DC    | 44.79     |
| 1245392 9 | 31456 3   | 6CLUBHSE | DVP           | 942470  | AE2-260 TAP  | DVP         | 1      | DVP_P4-2: 238T2002      | breaker | 427.0      | 104.06                | 114.37                 | DC    | 44.04     |
| 1245393 0 | 31456 3   | 6CLUBHSE | DVP           | 942470  | AE2-260 TAP  | DVP         | 1      | DVP_P4-2: 23872         | breaker | 427.0      | 104.04                | 114.35                 | DC    | 44.04     |
| 8090416   | 31456 9   | 6EARLEYS | DVP           | 314575  | 6NUCO TP     | DVP         | 1      | DVP_P1-2: LN 2092       | single  | 571.52     | 125.65                | 126.87                 | DC    | 6.95      |
| 8090417   | 31456 9   | 6EARLEYS | DVP           | 314575  | 6NUCO TP     | DVP         | 1      | DVP_P1-2: LN 2131       | single  | 571.52     | 124.87                | 126.09                 | DC    | 6.96      |
| 8090469   | 31457 5   | 6NUCO TP | DVP           | 919140  | AA1-138 TAP  | DVP         | 1      | DVP_P1-2: LN 2092       | single  | 571.52     | 119.27                | 120.48                 | DC    | 6.95      |
| 8090470   | 31457 5   | 6NUCO TP | DVP           | 919140  | AA1-138 TAP  | DVP         | 1      | DVP_P1-2: LN 2131       | single  | 571.52     | 118.49                | 119.7                  | DC    | 6.96      |
| 8090712   | 31457 9   | 6HORNRTN | DVP           | 934330  | AD1-057 TAP  | DVP         | 1      | DVP_P1-2: LN 238-B      | single  | 441.8      | 127.63                | 130.94                 | DC    | 14.61     |
| 8090713   | 31457 9   | 6HORNRTN | DVP           | 934330  | AD1-057 TAP  | DVP         | 1      | DVP_P1-2: LN 238-A      | single  | 441.8      | 115.47                | 117.35                 | DC    | 8.3       |
| 8090229   | 31458 3   | 6LAKEVEW | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-2: LN 2056-A     | single  | 375.06     | 146.25                | 147.8                  | DC    | 5.8       |
| 8090230   | 31458 3   | 6LAKEVEW | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-2: LN 238-B      | single  | 375.06     | 142.38                | 145.48                 | DC    | 11.61     |
| 8091025   | 31458 3   | 6LAKEVEW | DVP           | 314579  | 6HORNRTN     | DVP         | 1      | DVP_P1-2: LN 238-B      | single  | 441.8      | 100.69                | 104.02                 | DC    | 14.68     |
| 8090859   | 31459 1   | 6NASH    | DVP           | 304226  | 6PA-RMOUNT#4 | CPL         | 1      | DVP_P1-2: LN 2058       | single  | 470.0      | 120.93                | 122.28                 | DC    | 6.34      |
| 7720551   | 31459 9   | 6ROA VAL | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P4-2: 23872         | breaker | 671.0      | 110.17                | 111.84                 | DC    | 24.85     |
| 7720552   | 31459 9   | 6ROA VAL | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P4-2: 238T2002      | breaker | 671.0      | 109.98                | 111.65                 | DC    | 24.84     |
| 8242174   | 31462 5   | 3AULANDR | DVP           | 314568  | 3EARLEYS     | DVP         | 1      | DVP_P7-1: LN 56-2060    | tower   | 136.0      | 108.3                 | 110.49                 | DC    | 6.57      |
| 8242175   | 31462 5   | 3AULANDR | DVP           | 314568  | 3EARLEYS     | DVP         | 1      | DVP_P7-1: LN 56-2012    | tower   | 136.0      | 108.01                | 110.2                  | DC    | 6.57      |
| 8242142   | 31462 6   | 3WOODLND | DVP           | 314625  | 3AULANDR     | DVP         | 1      | DVP_P7-1: LN 56-2060    | tower   | 136.0      | 113.45                | 115.64                 | DC    | 6.57      |
| 8242143   | 31462 6   | 3WOODLND | DVP           | 314625  | 3AULANDR     | DVP         | 1      | DVP_P7-1: LN 56-2012    | tower   | 136.0      | 113.23                | 115.42                 | DC    | 6.57      |
| 7720386   | 31467 7   | 6BUCKING | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P4-2: 556T591       | breaker | 699.0      | 115.2                 | 116.29                 | DC    | 17.04     |
| 7720387   | 31467 7   | 6BUCKING | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P4-2: 511T556       | breaker | 699.0      | 115.2                 | 116.29                 | DC    | 17.04     |
| 7720388   | 31467 7   | 6BUCKING | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P4-2: 511T591       | breaker | 699.0      | 115.14                | 116.23                 | DC    | 17.04     |
| 8090823   | 31467 7   | 6BUCKING | DVP           | 314747  | 6BREMO       | DVP         | 1      | DVP_P1-2: LN 556        | single  | 571.52     | 110.44                | 112.18                 | DC    | 10.22     |
| 8090511   | 31469 1   | 3FARMVIL | DVP           | 314692  | 6FARMVIL     | DVP         | 2      | DVP_P1-2: LN 235-A-A    | single  | 182.64     | 112.64                | 117.59                 | DC    | 9.04      |
| 8090512   | 31469 1   | 3FARMVIL | DVP           | 314692  | 6FARMVIL     | DVP         | 2      | DVP_P1-3: 6FARMVIL-TX#4 | single  | 182.64     | 100.14                | 105.23                 | DC    | 9.31      |
| 7720401   | 31469 2   | 6FARMVIL | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P4-2: 511T556       | breaker | 684.0      | 113.49                | 114.61                 | DC    | 17.06     |

| ID           | FROM BUS#  | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME                     | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC/DC | MW IMPACT |
|--------------|------------|-------------|---------------|---------|--------------|-------------|--------|-------------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720402      | 31469<br>2 | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P4-2:<br>556T591          | breaker | 684.0      | 113.49                | 114.61                 | DC    | 17.06     |
| 7720403      | 31469<br>2 | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P4-2:<br>511T591          | breaker | 684.0      | 113.43                | 114.55                 | DC    | 17.06     |
| 8090840      | 31469<br>2 | 6FARMVIL    | DVP           | 314677  | 6BUCKING     | DVP         | 1      | DVP_P1-2:<br>LN 556           | single  | 559.3      | 109.31                | 111.1                  | DC    | 10.23     |
| 8090787      | 31469<br>7 | 6SEGE HILL  | DVP           | 927250  | AC1-221 TAP  | DVP         | 1      | DVP_P1-2:<br>LN 556           | single  | 674.92     | 115.67                | 116.76                 | DC    | 8.85      |
| 7720095      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P4-6:<br>CAROLIN<br>T122  | breaker | 199.0      | 160.26                | 163.35                 | DC    | 13.64     |
| 7720096      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P4-2:<br>2202             | breaker | 199.0      | 150.54                | 153.3                  | DC    | 12.16     |
| 8090853      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P1-2:<br>LN<br>6002_FSA   | single  | 199.0      | 124.75                | 128.14                 | DC    | 6.76      |
| 8090854      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P1-2:<br>LN 570           | single  | 199.0      | 124.75                | 128.14                 | DC    | 6.76      |
| 8090855      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P1-2:<br>LN<br>570_FSA    | single  | 199.0      | 124.75                | 128.14                 | DC    | 6.76      |
| 8090856      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P1-2:<br>LN 22-A          | single  | 199.0      | 118.41                | 121.95                 | DC    | 7.04      |
| 8090857      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | Base Case                     | single  | 199.0      | 112.63                | 116.03                 | DC    | 6.76      |
| 8241964      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P7-1:<br>LN 22-90-A       | tower   | 199.0      | 165.34                | 168.21                 | DC    | 12.63     |
| 8241965      | 31470<br>2 | 3KERR       | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P7-1:<br>LN 22-90-B       | tower   | 199.0      | 153.84                | 156.71                 | DC    | 12.63     |
| 8090779      | 31474<br>7 | 6BREMO      | DVP           | 313867  | 6BREMODIST   | DVP         | 1      | DVP_P1-2:<br>LN 556           | single  | 661.76     | 108.05                | 109.07                 | DC    | 6.74      |
| 8090890      | 31476<br>5 | 6MTEAGLE    | DVP           | 314749  | 6CHARLV      | DVP         | 1      | DVP_P1-2:<br>LN 556           | single  | 661.76     | 102.37                | 103.39                 | DC    | 6.73      |
| 8090480      | 91914<br>0 | AA1-138 TAP | DVP           | 314537  | 6SUFFOLK     | DVP         | 1      | DVP_P1-2:<br>LN 2092          | single  | 571.52     | 119.25                | 120.46                 | DC    | 6.95      |
| 8090481      | 91914<br>0 | AA1-138 TAP | DVP           | 314537  | 6SUFFOLK     | DVP         | 1      | DVP_P1-2:<br>LN 2131          | single  | 571.52     | 118.47                | 119.69                 | DC    | 6.96      |
| 7720139      | 92451<br>0 | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW     | DVP         | 1      | DVP_P4-2:<br>238T2002         | breaker | 427.0      | 153.74                | 164.05                 | DC    | 44.04     |
| 7720140      | 92451<br>0 | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW     | DVP         | 1      | DVP_P4-2:<br>23872            | breaker | 427.0      | 153.72                | 164.03                 | DC    | 44.04     |
| 8090547      | 92451<br>0 | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW     | DVP         | 1      | DVP_P1-2:<br>LN 238-B         | single  | 375.06     | 105.62                | 112.66                 | DC    | 26.42     |
| 8090748      | 92725<br>0 | AC1-221 TAP | DVP           | 304070  | 6PERSON230 T | CPL         | 1      | DVP_P1-2:<br>LN 556           | single  | 718.0      | 119.54                | 120.57                 | DC    | 8.85      |
| 8090610      | 93433<br>0 | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY    | DVP         | 1      | DVP_P1-2:<br>LN 238-B         | single  | 441.8      | 135.92                | 139.23                 | DC    | 14.61     |
| 8090611      | 93433<br>0 | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY    | DVP         | 1      | DVP_P1-2:<br>LN 238-A         | single  | 441.8      | 123.97                | 125.85                 | DC    | 8.3       |
| 7719986      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P4-2:<br>239T2141         | breaker | 637.0      | 187.99                | 195.77                 | DC    | 49.71     |
| 7719989      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P4-2:<br>205602           | breaker | 637.0      | 174.45                | 181.21                 | DC    | 43.08     |
| 8090363      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P1-2:<br>LN 2056-A        | single  | 598.78     | 125.22                | 129.49                 | DC    | 25.83     |
| 8090364      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P1-2:<br>LN 2060          | single  | 598.78     | 123.41                | 127.69                 | DC    | 25.8      |
| 8090368      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | Base Case                     | single  | 598.78     | 112.02                | 115.93                 | DC    | 23.55     |
| 8241943      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P7-1:<br>LN 2058-<br>2181 | tower   | 637.0      | 184.24                | 190.68                 | DC    | 40.98     |
| 8241944      | 94048<br>0 | AE2-033 TAP | DVP           | 314435  | 6SAPONY      | DVP         | 1      | DVP_P7-1:<br>LN 56-2060       | tower   | 637.0      | 176.62                | 183.65                 | DC    | 44.79     |
| 1245363<br>3 | 94247<br>0 | AE2-260 TAP | DVP           | 924510  | AB2-100 TAP  | DVP         | 1      | DVP_P4-2:<br>238T2002         | breaker | 427.0      | 135.76                | 146.07                 | DC    | 44.04     |

| ID       | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC/DC | MW IMPACT |
|----------|-----------|-------------|---------------|---------|-------------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 12453634 | 942470    | AE2-260 TAP | DVP           | 924510  | AB2-100 TAP | DVP         | 1      | DVP_P4-2: 23872 | breaker | 427.0      | 135.74                | 146.05                 | DC    | 44.04     |

#### 14.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

| ID       | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME               | Type      | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC/DC | MW IMPACT |
|----------|-----------|--------------|---------------|---------|--------------|-------------|--------|-------------------------|-----------|------------|-----------------------|------------------------|-------|-----------|
| 7363458  | 242631    | 05EDAN 1     | AEP           | 242620  | 05DANVL2     | AEP         | 1      | AEP_P1-2_#1377          | operation | 402.0      | 129.37                | 130.22                 | DC    | 7.56      |
| 8091213  | 313825    | 3PLYWOOD     | DVP           | 314696  | 3SEGE HILL   | DVP         | 1      | DVP_P1-2: LN 33-B       | operation | 141.0      | 116.31                | 119.72                 | DC    | 11.6      |
| 8090454  | 313845    | 6HATHAWAY    | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 2181       | operation | 374.0      | 180.31                | 181.56                 | DC    | 10.36     |
| 8090697  | 313845    | 6HATHAWAY    | DVP           | 314591  | 6NASH        | DVP         | 1      | DVP_P1-2: LN 2058       | operation | 449.32     | 159.77                | 160.83                 | DC    | 10.57     |
| 8090808  | 313867    | 6BREMODIST   | DVP           | 314765  | 6MTEAGLE     | DVP         | 1      | Base Case               | operation | 661.76     | 98.34                 | 99.02                  | DC    | 9.92      |
| 8091419  | 314227    | 6LAKESIDE    | DVP           | 314218  | 6ELMONT      | DVP         | 1      | DVP_P1-2: LN 557        | operation | 740.72     | 99.11                 | 99.58                  | DC    | 7.89      |
| 8091069  | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS     | DVP         | 1      | DVP_P1-2: LN 238-B      | operation | 559.3      | 131.07                | 133.07                 | DC    | 24.83     |
| 8090925  | 314282    | 6CARSON      | DVP           | 314285  | 6CHRL249     | DVP         | 1      | DVP_P1-2: LN 563        | operation | 559.3      | 143.73                | 146.14                 | DC    | 13.45     |
| 8091006  | 314285    | 6CHRL249     | DVP           | 314316  | 6LOCKS       | DVP         | 1      | DVP_P1-2: LN 563        | operation | 559.3      | 140.07                | 142.47                 | DC    | 13.45     |
| 8090287  | 314287    | 6CHESTFB     | DVP           | 314276  | 6BASIN       | DVP         | 1      | DVP_P1-2: LN 217        | operation | 449.32     | 198.98                | 199.89                 | DC    | 9.03      |
| 8091177  | 314299    | 6HARROWG     | DVP           | 314263  | 6TYLER1      | DVP         | 1      | DVP_P1-2: LN 563        | operation | 441.8      | 123.26                | 124.27                 | DC    | 9.93      |
| 13897017 | 314316    | 6LOCKS       | DVP           | 940430  | AE2-027 TAP  | DVP         | 1      | DVP_P1-2: LN 563        | operation | 441.8      | 102.19                | 103.27                 | DC    | 10.58     |
| 8091174  | 314331    | 6POE         | DVP           | 314299  | 6HARROWG     | DVP         | 1      | DVP_P1-2: LN 563        | operation | 441.8      | 123.28                | 124.3                  | DC    | 9.93      |
| 8090676  | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | DVP_P1-2: LN 2056-A     | operation | 678.68     | 160.07                | 166.41                 | DC    | 43.04     |
| 8090679  | 314435    | 6SAPONY      | DVP           | 314282  | 6CARSON      | DVP         | 1      | Base Case               | operation | 678.68     | 148.12                | 153.91                 | DC    | 39.24     |
| 8091343  | 314524    | 3FRNKLN      | DVP           | 314539  | 3UNCAMP      | DVP         | 1      | DVP_P1-2: LN 238-A      | operation | 224.66     | 106.72                | 108.43                 | DC    | 8.52      |
| 8090530  | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | DVP_P1-3: 6CLUBHSE-TX#1 | operation | 239.89     | 173.92                | 187.71                 | DC    | 33.06     |
| 8090535  | 314559    | 3CAROLNA     | DVP           | 314561  | 6CAROLNA     | DVP         | 1      | Base Case               | operation | 226.54     | 123.1                 | 125.12                 | DC    | 10.06     |
| 8091036  | 314561    | 6CAROLNA     | DVP           | 314599  | 6ROA VAL     | DVP         | 1      | DVP_P1-2: LN 238-B      | operation | 548.02     | 134.62                | 136.67                 | DC    | 24.83     |
| 8090186  | 314562    | 3CLUBHSE     | DVP           | 314563  | 6CLUBHSE     | DVP         | 1      | DVP_P1-2: LN 130-A      | operation | 182.64     | 221.34                | 259.76                 | DC    | 70.16     |

| ID        | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CK T ID | CONT NAME                   | Type      | Rating MVA | PRE PROJECT LOADIN G % | POST PROJECT LOADIN G % | AC/D C | MW IMPAC T |
|-----------|-----------|--------------|---------------|---------|--------------|-------------|---------|-----------------------------|-----------|------------|------------------------|-------------------------|--------|------------|
| 8090191   | 31456 2   | 3CLUBHSE     | DVP           | 31456 3 | 6CLUBHSE     | DVP         | 1       | Base Case                   | operation | 176.81     | 169.46                 | 199.77                  | DC     | 53.59      |
| 8090515   | 31456 3   | 6CLUBHSE     | DVP           | 94048 0 | AE2-033 TAP  | DVP         | 1       | DVP_P1-2: LN 2056-B         | operation | 598.78     | 169.15                 | 176.34                  | DC     | 43.05      |
| 8090519   | 31456 3   | 6CLUBHSE     | DVP           | 94048 0 | AE2-033 TAP  | DVP         | 1       | Base Case                   | operation | 598.78     | 159.95                 | 166.51                  | DC     | 39.25      |
| 1389672 2 | 31456 3   | 6CLUBHSE     | DVP           | 94247 0 | AE2-260 TAP  | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 375.06     | 118.44                 | 130.18                  | DC     | 44.04      |
| 8090420   | 31456 9   | 6EARLEYS     | DVP           | 31457 5 | 6NUCO TP     | DVP         | 1       | Base Case                   | operation | 571.52     | 115.73                 | 116.49                  | DC     | 9.6        |
| 8090473   | 31457 5   | 6NUCO TP     | DVP           | 91914 0 | AA1-138 TAP  | DVP         | 1       | Base Case                   | operation | 571.52     | 109.33                 | 110.09                  | DC     | 9.6        |
| 8090707   | 31457 9   | 6HORNRTN     | DVP           | 93433 0 | AD1-057 TAP  | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 441.8      | 159.53                 | 162.02                  | DC     | 24.36      |
| 8090717   | 31457 9   | 6HORNRTN     | DVP           | 93433 0 | AD1-057 TAP  | DVP         | 1       | Base Case                   | operation | 441.8      | 104.01                 | 105.24                  | DC     | 12.08      |
| 8091020   | 31458 3   | 6LAKEVEW     | DVP           | 31457 9 | 6HORNRTN     | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 441.8      | 134.32                 | 139.86                  | DC     | 24.47      |
| 8090858   | 31459 1   | 6NASH        | DVP           | 30422 6 | 6PA-RMOUNT#4 | CPL         | 1       | DVP_P1-2: LN 2058           | operation | 470.0      | 147.29                 | 148.31                  | DC     | 10.57      |
| 8091042   | 31459 9   | 6ROA VAL     | DVP           | 31426 6 | 6NORTHAMPTON | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 548.02     | 134.57                 | 136.61                  | DC     | 24.83      |
| 8091285   | 31460 0   | 3PLHITP      | DVP           | 31455 9 | 3CAROLNA     | DVP         | 1       | DVP_P1-3: 6CLUBHSE-TX#1     | operation | 315.84     | 111.15                 | 129.0                   | DC     | 56.37      |
| 8090822   | 31467 7   | 6BUCKING     | DVP           | 31474 7 | 6BREMO       | DVP         | 1       | DVP_P1-2: LN 556            | operation | 571.52     | 138.27                 | 139.6                   | DC     | 17.03      |
| 8090506   | 31469 1   | 3FARMVIL     | DVP           | 31469 2 | 6FARMVIL     | DVP         | 2       | DVP_P1-2: LN 235-A-A        | operation | 182.64     | 175.01                 | 178.73                  | DC     | 15.07      |
| 8090513   | 31469 1   | 3FARMVIL     | DVP           | 31469 2 | 6FARMVIL     | DVP         | 2       | Base Case                   | operation | 176.81     | 99.01                  | 101.39                  | DC     | 9.33       |
| 8090770   | 31469 1   | 3FARMVIL     | DVP           | 31469 2 | 6FARMVIL     | DVP         | 1       | DVP_P1-3: 6FARMVIL-TX#5     | operation | 198.06     | 149.88                 | 153.26                  | DC     | 14.88      |
| 8090839   | 31469 2   | 6FARMVIL     | DVP           | 31467 7 | 6BUCKING     | DVP         | 1       | DVP_P1-2: LN 556            | operation | 559.3      | 136.12                 | 137.48                  | DC     | 17.05      |
| 8091015   | 31469 6   | 3SEEDGE HILL | DVP           | 31469 7 | 6SEEDGE HILL | DVP         | 1       | DVP_P1-3: 6SEEDGE HILL-TX#2 | operation | 226.73     | 101.78                 | 104.72                  | DC     | 14.81      |
| 8091197   | 31469 6   | 3SEEDGE HILL | DVP           | 31469 7 | 6SEEDGE HILL | DVP         | 2       | DVP_P1-3: 6SEEDGE HILL-TX#1 | operation | 256.06     | 89.83                  | 92.43                   | DC     | 14.77      |
| 8090783   | 31469 7   | 6SEEDGE HILL | DVP           | 92725 0 | AC1-221 TAP  | DVP         | 1       | DVP_P1-2: LN 556            | operation | 674.92     | 137.43                 | 138.42                  | DC     | 14.76      |
| 8090847   | 31470 2   | 3KERR        | DVP           | 30410 2 | 3GW KING TAP | CPL         | 1       | DVP_P1-2: LN 6002_FSA       | operation | 199.0      | 144.17                 | 146.73                  | DC     | 11.26      |
| 8090848   | 31470 2   | 3KERR        | DVP           | 30410 2 | 3GW KING TAP | CPL         | 1       | DVP_P1-2: LN 570_FSA        | operation | 199.0      | 144.17                 | 146.73                  | DC     | 11.26      |
| 8090849   | 31470 2   | 3KERR        | DVP           | 30410 2 | 3GW KING TAP | CPL         | 1       | DVP_P1-2: LN 570            | operation | 199.0      | 144.17                 | 146.73                  | DC     | 11.26      |
| 8090851   | 31470 2   | 3KERR        | DVP           | 30410 2 | 3GW KING TAP | CPL         | 1       | Base Case                   | operation | 199.0      | 132.2                  | 134.76                  | DC     | 11.27      |
| 8091408   | 31470 7   | 3MORAN       | DVP           | 31469 1 | 3FARMVIL     | DVP         | 1       | DVP_P1-2: LN 84             | operation | 203.98     | 99.33                  | 101.95                  | DC     | 11.88      |
| 8090780   | 31474 7   | 6BREMO       | DVP           | 31386 7 | 6BREMODIST   | DVP         | 1       | Base Case                   | operation | 661.76     | 100.67                 | 101.34                  | DC     | 9.92       |
| 8090323   | 31491 4   | 8MDLTHAN     | DVP           | 31491 8 | 8NO ANNA     | DVP         | 1       | Base Case                   | operation | 2442.1 2   | 134.99                 | 135.27                  | DC     | 24.65      |
| 8090484   | 91914 0   | AA1-138 TAP  | DVP           | 31453 7 | 6SUFFOLK     | DVP         | 1       | Base Case                   | operation | 571.52     | 109.33                 | 110.09                  | DC     | 9.6        |
| 8090545   | 92451 0   | AB2-100 TAP  | DVP           | 31458 3 | 6LAKEVEW     | DVP         | 1       | DVP_P1-2: LN 238-B          | operation | 375.06     | 175.0                  | 186.74                  | DC     | 44.04      |
| 8091402   | 92714 0   | AC1-208 TAP  | DVP           | 31385 8 | 3SO JUSTICE  | DVP         | 1       | DVP_P1-3: 6CAROLNA-TX#4     | operation | 165.44     | 101.8                  | 103.68                  | DC     | 6.87       |

| ID       | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CK T ID | CONT NAME               | Type      | Rating MVA | PRE PROJECT LOADIN G % | POST PROJECT LOADIN G % | AC D C | MW IMPAC T |
|----------|-----------|-------------|---------------|---------|-------------|-------------|---------|-------------------------|-----------|------------|------------------------|-------------------------|--------|------------|
| 8090605  | 934330    | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY   | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 441.8      | 172.36                 | 174.84                  | DC     | 24.36      |
| 8090615  | 934330    | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY   | DVP         | 1       | Base Case               | operation | 441.8      | 113.67                 | 114.91                  | DC     | 12.08      |
| 8091460  | 937570    | AD2-169 TAP | DVP           | 314600  | 3PLHITP     | DVP         | 1       | DVP_P1-3: 6CLUBHSE-TX#1 | operation | 370.36     | 94.82                  | 110.04                  | DC     | 56.37      |
| 13896926 | 940430    | AE2-027 TAP | DVP           | 314301  | 6HARR205    | DVP         | 1       | DVP_P1-2: LN 563        | operation | 441.8      | 109.5                  | 110.58                  | DC     | 10.58      |
| 8090358  | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY     | DVP         | 1       | DVP_P1-2: LN 2056-A     | operation | 598.78     | 185.24                 | 192.43                  | DC     | 43.05      |
| 8090362  | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY     | DVP         | 1       | Base Case               | operation | 598.78     | 169.75                 | 176.31                  | DC     | 39.25      |
| 13896250 | 942470    | AE2-260 TAP | DVP           | 924510  | AB2-100 TAP | DVP         | 1       | DVP_P1-2: LN 238-B      | operation | 375.06     | 154.53                 | 166.27                  | DC     | 44.04      |

## 14.5 Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

---

### 14.5.1 Index 1

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME       | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|-----------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091216 | 313825    | 3PLYWOOD | DVP           | 314696  | 3SEEDGE HILL | DVP         | 1      | DVP_P1-2: LN 45 | single | 141.0      | 100.73                | 104.73                 | DC    | 5.64      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314429     | 3JTRSVLE     | 0.12      |
| 314704     | 3LAWRENC     | 0.09      |
| 315150     | 1BUGGS 1     | 22.56     |
| 315151     | 1BUGGS 2     | 22.56     |
| 315158     | 1KERR 1      | 0.26      |
| 315159     | 1KERR 2      | 1.05      |
| 315160     | 1KERR 3      | 1.03      |
| 315161     | 1KERR 4      | 1.03      |
| 315162     | 1KERR 5      | 1.03      |
| 315163     | 1KERR 6      | 1.03      |
| 315164     | 1KERR 7      | 1.03      |
| 315266     | 1PLYWOOD A   | 4.37      |
| 924021     | AB2-043 C O1 | 0.28      |
| 924161     | AB2-060 C O1 | 0.8       |
| 924301     | AB2-077 C O1 | 0.21      |
| 924311     | AB2-078 C O1 | 0.21      |
| 924321     | AB2-079 C O1 | 0.21      |
| 924401     | AB2-089 C    | 1.89      |
| 925611     | AC1-036 C    | 0.07      |
| 925781     | AC1-054 C O1 | 5.9       |
| 925831     | AC1-062      | 0.02      |
| 934231     | AD1-050 C    | 4.17      |
| 935221     | AD1-157 C    | 0.07      |
| 935231     | AD1-160 C    | 0.41      |
| 936261     | AD2-033 C    | 7.81      |
| 936361     | AD2-046 C O1 | 8.55      |
| 936481     | AD2-063 C O1 | 10.07     |
| 938371     | AE1-056 C    | 2.44      |
| 939181     | AE1-148 C O1 | 8.32      |
| 939371     | AE1-168 C    | 7.14      |
| 940241     | AE2-006      | 0.28      |
| 940661     | AE2-053      | 3.1       |
| 942451     | AE2-258      | 1.73      |
| 942711     | AE2-287 C O2 | 5.64      |
| BLUEG      | BLUEG        | 1.05      |
| CALDERWOOD | CALDERWOOD   | 0.15      |
| CANNELTON  | CANNELTON    | 0.07      |
| CARR       | CARR         | 0.01      |
| CATAWBA    | CATAWBA      | 0.12      |
| CHEOAH     | CHEOAH       | 0.14      |
| CHILHOWEE  | CHILHOWEE    | 0.05      |
| COFFEEN    | COFFEEN      | 0.11      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>COTTONWOOD</b> | COTTONWOOD | 0.53             |
| <b>DUCKCREEK</b>  | DUCKCREEK  | 0.24             |
| <b>EDWARDS</b>    | EDWARDS    | 0.11             |
| <b>ELMERSMITH</b> | ELMERSMITH | 0.12             |
| <b>FARMERCITY</b> | FARMERCITY | 0.08             |
| <b>GIBSON</b>     | GIBSON     | 0.04             |
| <b>HAMLET</b>     | HAMLET     | 0.18             |
| <b>NEWTON</b>     | NEWTON     | 0.29             |
| <b>PRAIRIE</b>    | PRAIRIE    | 0.58             |
| <b>RENSSELAER</b> | RENSSELAER | 0.01             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.04             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.05             |
| <b>TATANKA</b>    | TATANKA    | 0.13             |
| <b>TILTON</b>     | TILTON     | 0.13             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.12             |
| <b>TVA</b>        | TVA        | 0.45             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.21             |

## 14.5.2 Index 2

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS  | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|---------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720319 | 314299    | 6HARROWG | DVP           | 314263  | 6TYLER1 | DVP         | 1      | DVP_P4-2:<br>24972-4 | breaker | 541.0      | 144.23                | 148.55                 | DC    | 23.37     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314539 | 3UNCAMP      | 1.22      |
| 314541 | 3WATKINS     | 0.38      |
| 314554 | 3BTLEBRO     | 0.5       |
| 314557 | 3BETHELC     | 0.48      |
| 314572 | 3EMPORIA     | 0.58      |
| 314574 | 6EVERETS     | 2.18      |
| 314578 | 3HORNRTN     | 2.96      |
| 314582 | 3KELFORD     | 2.27      |
| 314603 | 3SCOT NK     | 2.25      |
| 314617 | 3TUNIS       | 0.53      |
| 314620 | 6CASHIE      | 0.4       |
| 314623 | 3WITAKRS     | 0.88      |
| 314704 | 3LAWRENC     | 0.29      |
| 315126 | 1ROARAP2     | 0.93      |
| 315131 | 1EDGECEMA    | 5.88      |
| 315132 | 1EDGECEMB    | 5.88      |
| 315136 | 1ROSEMG1     | 1.72      |
| 315137 | 1ROSEMS1     | 1.07      |
| 315138 | 1ROSEMG2     | 0.8       |
| 315139 | 1GASTONA     | 2.54      |
| 315141 | 1GASTONB     | 2.54      |
| 900672 | V4-068 E     | 0.19      |
| 907092 | X1-038 E     | 3.04      |
| 917332 | Z2-043 E     | 0.64      |
| 917342 | Z2-044 E     | 0.38      |
| 917512 | Z2-088 E OP1 | 2.17      |
| 918492 | AA1-063AE OP | 3.19      |
| 918512 | AA1-065 E OP | 2.44      |
| 918532 | AA1-067 E    | 0.39      |
| 918562 | AA1-072 E    | 0.11      |
| 919692 | AA2-053 E    | 3.2       |
| 919701 | AA2-057 C    | 4.86      |
| 919702 | AA2-057 E    | 2.43      |
| 920042 | AA2-088 E OP | 6.77      |
| 920592 | AA2-165 E    | 0.32      |
| 920672 | AA2-174 E    | 0.37      |
| 923801 | AB2-015 C O1 | 4.55      |
| 923802 | AB2-015 E O1 | 3.74      |
| 923851 | AB2-025 C    | 0.71      |
| 923852 | AB2-025 E    | 2.6       |
| 923911 | AB2-031 C O1 | 2.72      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 923912 | AB2-031 E O1 | 1.34      |
| 923991 | AB2-040 C O1 | 1.09      |
| 923992 | AB2-040 E O1 | 7.31      |
| 924022 | AB2-043 E O1 | 2.58      |
| 924152 | AB2-059 E O1 | 3.39      |
| 924162 | AB2-060 E O1 | 2.1       |
| 924302 | AB2-077 E O1 | 0.66      |
| 924312 | AB2-078 E O1 | 0.66      |
| 924322 | AB2-079 E O1 | 0.66      |
| 924401 | AB2-089 C    | 1.32      |
| 924402 | AB2-089 E    | 0.68      |
| 924491 | AB2-098 C    | 0.3       |
| 924492 | AB2-098 E    | 0.13      |
| 924501 | AB2-099 C    | 0.37      |
| 924502 | AB2-099 E    | 0.16      |
| 924511 | AB2-100 C    | 19.94     |
| 924512 | AB2-100 E    | 9.82      |
| 925061 | AB2-161 C O1 | 3.56      |
| 925062 | AB2-161 E O1 | 5.8       |
| 925171 | AB2-174 C O1 | 8.98      |
| 925172 | AB2-174 E O1 | 8.12      |
| 925591 | AC1-034 C    | 4.26      |
| 925592 | AC1-034 E    | 3.22      |
| 925781 | AC1-054 C O1 | 4.71      |
| 925782 | AC1-054 E O1 | 2.17      |
| 926071 | AC1-086 C    | 23.46     |
| 926072 | AC1-086 E    | 10.68     |
| 926201 | AC1-098 C    | 4.34      |
| 926202 | AC1-098 E    | 2.58      |
| 926211 | AC1-099 C    | 1.45      |
| 926212 | AC1-099 E    | 0.85      |
| 927021 | AC1-189 C    | 4.75      |
| 927022 | AC1-189 E    | 2.37      |
| 927141 | AC1-208 C    | 6.77      |
| 927142 | AC1-208 E    | 3.01      |
| 930402 | AB1-081 E O1 | 2.39      |
| 930861 | AB1-132 C O1 | 1.94      |
| 930862 | AB1-132 E O1 | 6.83      |
| 931231 | AB1-173 C    | 0.33      |
| 931232 | AB1-173 E    | 1.28      |
| 931241 | AB1-173AC    | 0.33      |
| 931242 | AB1-173AE    | 1.28      |
| 932581 | AC2-078 C O1 | 6.56      |
| 932582 | AC2-078 E O1 | 10.7      |
| 932591 | AC2-079 C O1 | 4.04      |
| 932592 | AC2-079 E O1 | 6.59      |
| 932631 | AC2-084 C    | 6.18      |
| 932632 | AC2-084 E    | 3.05      |
| 934201 | AD1-047 C    | 9.75      |
| 934202 | AD1-047 E    | 6.5       |
| 934231 | AD1-050 C    | 2.91      |
| 934232 | AD1-050 E    | 1.59      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 934331 | AD1-057 C O1 | 8.58      |
| 934332 | AD1-057 E O1 | 4.58      |
| 934571 | AD1-082 C    | 8.1       |
| 934572 | AD1-082 E    | 4.62      |
| 935211 | AD1-156 C    | 0.84      |
| 935212 | AD1-156 E    | 4.58      |
| 936361 | AD2-046 C O1 | 4.87      |
| 936362 | AD2-046 E O1 | 2.24      |
| 936401 | AD2-051 C O1 | 5.39      |
| 936402 | AD2-051 E O1 | 2.31      |
| 936661 | AD2-085 C    | 2.49      |
| 936662 | AD2-085 E    | 4.07      |
| 936701 | AD2-089 C    | 4.3       |
| 936702 | AD2-089 E    | 2.87      |
| 936711 | AD2-090 C O1 | 4.17      |
| 936712 | AD2-090 E O1 | 2.78      |
| 937571 | AD2-169 C    | 11.48     |
| 937572 | AD2-169 E    | 7.65      |
| 938171 | AE1-026 C1 O | 13.16     |
| 938172 | AE1-026 C2 O | 1.9       |
| 938173 | AE1-026 E O1 | 3.98      |
| 938221 | AE1-035 C    | 1.24      |
| 938222 | AE1-035 E    | 0.61      |
| 938631 | AE1-085 C O1 | 16.84     |
| 938632 | AE1-085 E O1 | 11.23     |
| 938771 | AE1-103 C O1 | 1.82      |
| 938772 | AE1-103 E O1 | 2.52      |
| 939071 | AE1-135 C O1 | 37.34     |
| 939072 | AE1-135 E O1 | 24.89     |
| 939181 | AE1-148 C O1 | 4.78      |
| 939182 | AE1-148 E O1 | 3.19      |
| 939191 | AE1-149 C O1 | 18.48     |
| 939192 | AE1-149 E O1 | 12.32     |
| 940061 | AE1-248 C O1 | 16.84     |
| 940062 | AE1-248 E O1 | 11.23     |
| 940481 | AE2-033 C    | 35.93     |
| 940482 | AE2-033 E    | 24.22     |
| 940521 | AE2-037 C O2 | 4.29      |
| 940522 | AE2-037 E O2 | 2.07      |
| 940571 | AE2-044 C    | 2.79      |
| 940572 | AE2-044 E    | 1.2       |
| 940641 | AE2-051 C O2 | 44.63     |
| 940642 | AE2-051 E O2 | 29.75     |
| 940651 | AE2-052      | 6.19      |
| 940661 | AE2-053      | 1.78      |
| 941541 | AE2-151 C    | 0.67      |
| 941542 | AE2-151 E    | 0.36      |
| 941601 | AE2-157 C O2 | 12.15     |
| 941602 | AE2-157 E O2 | 8.1       |
| 941951 | AE2-207      | 1.8       |
| 942341 | AE2-247 C    | 1.08      |
| 942342 | AE2-247 E    | 1.49      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 942371     | AE2-250 C O2 | 13.07     |
| 942372     | AE2-250 E O2 | 6.9       |
| 942451     | AE2-258      | 1.17      |
| 942471     | AE2-260 C O2 | 25.56     |
| 942472     | AE2-260 E O2 | 36.26     |
| 942711     | AE2-287 C O2 | 14.02     |
| 942712     | AE2-287 E O2 | 9.35      |
| 943171     | AE2-346 C    | 1.1       |
| 943172     | AE2-346 E    | 0.47      |
| AA2-074    | AA2-074      | 1.64      |
| CARR       | CARR         | 0.16      |
| CBM-S1     | CBM-S1       | 3.81      |
| CBM-S2     | CBM-S2       | 4.44      |
| CBM-W1     | CBM-W1       | 3.84      |
| CBM-W2     | CBM-W2       | 24.85     |
| CIN        | CIN          | 1.73      |
| CPL        | CPL          | 2.41      |
| G-007      | G-007        | 0.55      |
| IPL        | IPL          | 1.09      |
| LGEE       | LGEE         | 0.5       |
| MEC        | MEC          | 3.85      |
| MECS       | MECS         | 1.63      |
| O-066      | O-066        | 3.48      |
| RENSSELAER | RENSSELAER   | 0.13      |
| WEC        | WEC          | 0.46      |

### 14.5.3 Index 3

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720317 | 314331    | 6POE     | DVP           | 314299  | 6HARROWG | DVP         | 1      | DVP_P4-2:<br>24972-4 | breaker | 541.0      | 144.25                | 148.57                 | DC    | 23.37     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314539 | 3UNCAMP      | 1.22      |
| 314541 | 3WATKINS     | 0.38      |
| 314554 | 3BTLEBRO     | 0.5       |
| 314557 | 3BETHELC     | 0.48      |
| 314572 | 3EMPORIA     | 0.58      |
| 314574 | 6EVERETS     | 2.18      |
| 314578 | 3HORNRTN     | 2.96      |
| 314582 | 3KELFORD     | 2.27      |
| 314603 | 3SCOT NK     | 2.25      |
| 314617 | 3TUNIS       | 0.53      |
| 314620 | 6CASHIE      | 0.4       |
| 314623 | 3WITAKRS     | 0.88      |
| 314704 | 3LAWRENC     | 0.29      |
| 315126 | 1ROARAP2     | 0.93      |
| 315131 | 1EDGECEMA    | 5.88      |
| 315132 | 1EDGECEMB    | 5.88      |
| 315136 | 1ROSEMG1     | 1.72      |
| 315137 | 1ROSEMS1     | 1.07      |
| 315138 | 1ROSEMG2     | 0.8       |
| 315139 | 1GASTONA     | 2.54      |
| 315141 | 1GASTONB     | 2.54      |
| 900672 | V4-068 E     | 0.19      |
| 907092 | X1-038 E     | 3.04      |
| 917332 | Z2-043 E     | 0.64      |
| 917342 | Z2-044 E     | 0.38      |
| 917512 | Z2-088 E OP1 | 2.17      |
| 918492 | AA1-063AE OP | 3.19      |
| 918512 | AA1-065 E OP | 2.44      |
| 918532 | AA1-067 E    | 0.39      |
| 918562 | AA1-072 E    | 0.11      |
| 919692 | AA2-053 E    | 3.2       |
| 919701 | AA2-057 C    | 4.86      |
| 919702 | AA2-057 E    | 2.43      |
| 920042 | AA2-088 E OP | 6.77      |
| 920592 | AA2-165 E    | 0.32      |
| 920672 | AA2-174 E    | 0.37      |
| 923801 | AB2-015 C O1 | 4.55      |
| 923802 | AB2-015 E O1 | 3.74      |
| 923851 | AB2-025 C    | 0.71      |
| 923852 | AB2-025 E    | 2.6       |
| 923911 | AB2-031 C O1 | 2.72      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 923912 | AB2-031 E O1 | 1.34      |
| 923991 | AB2-040 C O1 | 1.09      |
| 923992 | AB2-040 E O1 | 7.31      |
| 924022 | AB2-043 E O1 | 2.58      |
| 924152 | AB2-059 E O1 | 3.39      |
| 924162 | AB2-060 E O1 | 2.1       |
| 924302 | AB2-077 E O1 | 0.66      |
| 924312 | AB2-078 E O1 | 0.66      |
| 924322 | AB2-079 E O1 | 0.66      |
| 924401 | AB2-089 C    | 1.32      |
| 924402 | AB2-089 E    | 0.68      |
| 924491 | AB2-098 C    | 0.3       |
| 924492 | AB2-098 E    | 0.13      |
| 924501 | AB2-099 C    | 0.37      |
| 924502 | AB2-099 E    | 0.16      |
| 924511 | AB2-100 C    | 19.94     |
| 924512 | AB2-100 E    | 9.82      |
| 925061 | AB2-161 C O1 | 3.56      |
| 925062 | AB2-161 E O1 | 5.8       |
| 925171 | AB2-174 C O1 | 8.98      |
| 925172 | AB2-174 E O1 | 8.12      |
| 925591 | AC1-034 C    | 4.26      |
| 925592 | AC1-034 E    | 3.22      |
| 925781 | AC1-054 C O1 | 4.71      |
| 925782 | AC1-054 E O1 | 2.17      |
| 926071 | AC1-086 C    | 23.46     |
| 926072 | AC1-086 E    | 10.68     |
| 926201 | AC1-098 C    | 4.34      |
| 926202 | AC1-098 E    | 2.58      |
| 926211 | AC1-099 C    | 1.45      |
| 926212 | AC1-099 E    | 0.85      |
| 927021 | AC1-189 C    | 4.75      |
| 927022 | AC1-189 E    | 2.37      |
| 927141 | AC1-208 C    | 6.77      |
| 927142 | AC1-208 E    | 3.01      |
| 930402 | AB1-081 E O1 | 2.39      |
| 930861 | AB1-132 C O1 | 1.94      |
| 930862 | AB1-132 E O1 | 6.83      |
| 931231 | AB1-173 C    | 0.33      |
| 931232 | AB1-173 E    | 1.28      |
| 931241 | AB1-173AC    | 0.33      |
| 931242 | AB1-173AE    | 1.28      |
| 932581 | AC2-078 C O1 | 6.56      |
| 932582 | AC2-078 E O1 | 10.7      |
| 932591 | AC2-079 C O1 | 4.04      |
| 932592 | AC2-079 E O1 | 6.59      |
| 932631 | AC2-084 C    | 6.18      |
| 932632 | AC2-084 E    | 3.05      |
| 934201 | AD1-047 C    | 9.75      |
| 934202 | AD1-047 E    | 6.5       |
| 934231 | AD1-050 C    | 2.91      |
| 934232 | AD1-050 E    | 1.59      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 934331 | AD1-057 C O1 | 8.58      |
| 934332 | AD1-057 E O1 | 4.58      |
| 934571 | AD1-082 C    | 8.1       |
| 934572 | AD1-082 E    | 4.62      |
| 935211 | AD1-156 C    | 0.84      |
| 935212 | AD1-156 E    | 4.58      |
| 936361 | AD2-046 C O1 | 4.87      |
| 936362 | AD2-046 E O1 | 2.24      |
| 936401 | AD2-051 C O1 | 5.39      |
| 936402 | AD2-051 E O1 | 2.31      |
| 936661 | AD2-085 C    | 2.49      |
| 936662 | AD2-085 E    | 4.07      |
| 936701 | AD2-089 C    | 4.3       |
| 936702 | AD2-089 E    | 2.87      |
| 936711 | AD2-090 C O1 | 4.17      |
| 936712 | AD2-090 E O1 | 2.78      |
| 937571 | AD2-169 C    | 11.48     |
| 937572 | AD2-169 E    | 7.65      |
| 938171 | AE1-026 C1 O | 13.16     |
| 938172 | AE1-026 C2 O | 1.9       |
| 938173 | AE1-026 E O1 | 3.98      |
| 938221 | AE1-035 C    | 1.24      |
| 938222 | AE1-035 E    | 0.61      |
| 938631 | AE1-085 C O1 | 16.84     |
| 938632 | AE1-085 E O1 | 11.23     |
| 938771 | AE1-103 C O1 | 1.82      |
| 938772 | AE1-103 E O1 | 2.52      |
| 939071 | AE1-135 C O1 | 37.34     |
| 939072 | AE1-135 E O1 | 24.89     |
| 939181 | AE1-148 C O1 | 4.78      |
| 939182 | AE1-148 E O1 | 3.19      |
| 939191 | AE1-149 C O1 | 18.48     |
| 939192 | AE1-149 E O1 | 12.32     |
| 940061 | AE1-248 C O1 | 16.84     |
| 940062 | AE1-248 E O1 | 11.23     |
| 940481 | AE2-033 C    | 35.93     |
| 940482 | AE2-033 E    | 24.22     |
| 940521 | AE2-037 C O2 | 4.29      |
| 940522 | AE2-037 E O2 | 2.07      |
| 940571 | AE2-044 C    | 2.79      |
| 940572 | AE2-044 E    | 1.2       |
| 940641 | AE2-051 C O2 | 44.63     |
| 940642 | AE2-051 E O2 | 29.75     |
| 940651 | AE2-052      | 6.19      |
| 940661 | AE2-053      | 1.78      |
| 941541 | AE2-151 C    | 0.67      |
| 941542 | AE2-151 E    | 0.36      |
| 941601 | AE2-157 C O2 | 12.15     |
| 941602 | AE2-157 E O2 | 8.1       |
| 941951 | AE2-207      | 1.8       |
| 942341 | AE2-247 C    | 1.08      |
| 942342 | AE2-247 E    | 1.49      |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>942371</b>     | AE2-250 C O2 | 13.07            |
| <b>942372</b>     | AE2-250 E O2 | 6.9              |
| <b>942451</b>     | AE2-258      | 1.17             |
| <b>942471</b>     | AE2-260 C O2 | 25.56            |
| <b>942472</b>     | AE2-260 E O2 | 36.26            |
| <b>942711</b>     | AE2-287 C O2 | 14.02            |
| <b>942712</b>     | AE2-287 E O2 | 9.35             |
| <b>943171</b>     | AE2-346 C    | 1.1              |
| <b>943172</b>     | AE2-346 E    | 0.47             |
| <b>AA2-074</b>    | AA2-074      | 1.64             |
| <b>CARR</b>       | CARR         | 0.16             |
| <b>CBM-S1</b>     | CBM-S1       | 3.81             |
| <b>CBM-S2</b>     | CBM-S2       | 4.44             |
| <b>CBM-W1</b>     | CBM-W1       | 3.84             |
| <b>CBM-W2</b>     | CBM-W2       | 24.85            |
| <b>CIN</b>        | CIN          | 1.73             |
| <b>CPL</b>        | CPL          | 2.41             |
| <b>G-007</b>      | G-007        | 0.55             |
| <b>IPL</b>        | IPL          | 1.09             |
| <b>LGEE</b>       | LGEE         | 0.5              |
| <b>MEC</b>        | MEC          | 3.85             |
| <b>MECS</b>       | MECS         | 1.63             |
| <b>O-066</b>      | O-066        | 3.48             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.13             |
| <b>WEC</b>        | WEC          | 0.46             |

#### 14.5.4 Index 4

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS  | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|---------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720267 | 314435    | 6SAPONY  | DVP           | 314282  | 6CARSON | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 830.0      | 142.17                | 148.01                 | DC    | 49.7      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.24      |
| 314578 | 3HORNRTN     | 3.01      |
| 314704 | 3LAWRENC     | 0.62      |
| 315126 | 1ROARAP2     | 0.97      |
| 315128 | 1ROARAP4     | 0.94      |
| 315139 | 1GASTONA     | 10.52     |
| 315141 | 1GASTONB     | 10.52     |
| 918491 | AA1-063AC OP | 0.76      |
| 918492 | AA1-063AE OP | 2.96      |
| 919691 | AA2-053 C    | 0.89      |
| 919692 | AA2-053 E    | 3.15      |
| 920671 | AA2-174 C    | 0.04      |
| 920672 | AA2-174 E    | 0.36      |
| 923851 | AB2-025 C    | 1.48      |
| 923852 | AB2-025 E    | 5.44      |
| 923911 | AB2-031 C O1 | 5.04      |
| 923912 | AB2-031 E O1 | 2.48      |
| 923991 | AB2-040 C O1 | 2.02      |
| 923992 | AB2-040 E O1 | 13.53     |
| 924021 | AB2-043 C O1 | 0.3       |
| 924022 | AB2-043 E O1 | 4.05      |
| 924161 | AB2-060 C O1 | 0.85      |
| 924162 | AB2-060 E O1 | 3.3       |
| 924301 | AB2-077 C O1 | 0.19      |
| 924302 | AB2-077 E O1 | 1.02      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924312 | AB2-078 E O1 | 1.02      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924322 | AB2-079 E O1 | 1.02      |
| 924401 | AB2-089 C    | 1.6       |
| 924402 | AB2-089 E    | 0.83      |
| 924511 | AB2-100 C    | 52.6      |
| 924512 | AB2-100 E    | 25.91     |
| 925171 | AB2-174 C O1 | 17.73     |
| 925172 | AB2-174 E O1 | 16.04     |
| 925781 | AC1-054 C O1 | 5.59      |
| 925782 | AC1-054 E O1 | 2.58      |
| 926071 | AC1-086 C    | 97.11     |
| 926072 | AC1-086 E    | 44.2      |
| 930861 | AB1-132 C O1 | 8.04      |
| 930862 | AB1-132 E O1 | 28.26     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931231     | AB1-173 C    | 0.62      |
| 931232     | AB1-173 E    | 2.37      |
| 931241     | AB1-173AC    | 0.62      |
| 931242     | AB1-173AE    | 2.37      |
| 934201     | AD1-047 C    | 18.04     |
| 934202     | AD1-047 E    | 12.03     |
| 934231     | AD1-050 C    | 3.53      |
| 934232     | AD1-050 E    | 1.93      |
| 936481     | AD2-063 C O1 | 10.78     |
| 936482     | AD2-063 E O1 | 7.19      |
| 937571     | AD2-169 C    | 19.53     |
| 937572     | AD2-169 E    | 13.02     |
| 939071     | AE1-135 C O1 | 94.2      |
| 939072     | AE1-135 E O1 | 62.8      |
| 939181     | AE1-148 C O1 | 6.33      |
| 939182     | AE1-148 E O1 | 4.22      |
| 940481     | AE2-033 C    | 76.88     |
| 940482     | AE2-033 E    | 51.83     |
| 942371     | AE2-250 C O2 | 29.4      |
| 942372     | AE2-250 E O2 | 15.52     |
| 942451     | AE2-258      | 1.84      |
| 942471     | AE2-260 C O2 | 64.92     |
| 942472     | AE2-260 E O2 | 92.08     |
| 942711     | AE2-287 C O2 | 29.82     |
| 942712     | AE2-287 E O2 | 19.88     |
| CARR       | CARR         | 0.13      |
| CBM-S1     | CBM-S1       | 1.39      |
| CBM-S2     | CBM-S2       | 1.82      |
| CBM-W1     | CBM-W1       | 1.12      |
| CBM-W2     | CBM-W2       | 8.8       |
| CIN        | CIN          | 0.53      |
| CPL        | CPL          | 1.02      |
| G-007      | G-007        | 0.44      |
| IPL        | IPL          | 0.33      |
| LGEE       | LGEE         | 0.16      |
| MEC        | MEC          | 1.26      |
| MECS       | MECS         | 0.35      |
| O-066      | O-066        | 2.77      |
| RENSSELAER | RENSSELAER   | 0.11      |
| WEC        | WEC          | 0.14      |

### 14.5.5 Index 5

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME               | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|-------------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090536 | 314559    | 3CAROLNA | DVP           | 314561  | 6CAROLNA | DVP         | 1      | DVP_P1-3: 6CLUBHSE-TX#1 | single | 239.89     | 115.51                | 123.78                 | DC    | 19.84     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.14      |
| 314589 | 3MURPHYS     | 0.06      |
| 314704 | 3LAWRENC     | 0.4       |
| 315115 | 1S HAMPT1    | 0.97      |
| 315126 | 1ROARAP2     | 2.58      |
| 315128 | 1ROARAP4     | 2.48      |
| 315150 | 1BUGGS 1     | 9.3       |
| 315151 | 1BUGGS 2     | 9.3       |
| 315158 | 1KERR 1      | 0.29      |
| 315159 | 1KERR 2      | 1.17      |
| 315160 | 1KERR 3      | 1.16      |
| 315161 | 1KERR 4      | 1.16      |
| 315162 | 1KERR 5      | 1.16      |
| 315163 | 1KERR 6      | 1.16      |
| 315164 | 1KERR 7      | 1.16      |
| 315266 | 1PLYWOOD A   | 0.36      |
| 917331 | Z2-043 C     | 0.16      |
| 917341 | Z2-044 C     | 0.05      |
| 918491 | AA1-063AC OP | 1.74      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 2.2       |
| 919701 | AA2-057 C    | 4.3       |
| 920041 | AA2-088 C OP | 0.93      |
| 920591 | AA2-165 C    | 0.07      |
| 920671 | AA2-174 C    | 0.1       |
| 923801 | AB2-015 C O1 | 6.7       |
| 923911 | AB2-031 C O1 | 4.97      |
| 923991 | AB2-040 C O1 | 1.99      |
| 924021 | AB2-043 C O1 | 0.32      |
| 924161 | AB2-060 C O1 | 0.92      |
| 924301 | AB2-077 C O1 | 0.2       |
| 924311 | AB2-078 C O1 | 0.2       |
| 924321 | AB2-079 C O1 | 0.2       |
| 924401 | AB2-089 C    | 2.92      |
| 924501 | AB2-099 C    | 0.31      |
| 925171 | AB2-174 C O1 | 15.07     |
| 925611 | AC1-036 C    | 0.08      |
| 925781 | AC1-054 C O1 | 10.82     |
| 925831 | AC1-062      | 0.02      |
| 926201 | AC1-098 C    | 5.34      |
| 926211 | AC1-099 C    | 1.79      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 926271     | AC1-105 C O1 | 2.17      |
| 927141     | AC1-208 C    | 10.5      |
| 931231     | AB1-173 C    | 0.61      |
| 931241     | AB1-173AC    | 0.61      |
| 932631     | AC2-084 C    | 7.61      |
| 934201     | AD1-047 C    | 17.8      |
| 934231     | AD1-050 C    | 6.43      |
| 935221     | AD1-157 C    | 0.08      |
| 935231     | AD1-160 C    | 0.5       |
| 936261     | AD2-033 C    | 9.1       |
| 936361     | AD2-046 C O1 | 9.63      |
| 936401     | AD2-051 C O1 | 3.33      |
| 936481     | AD2-063 C O1 | 11.64     |
| 936711     | AD2-090 C O1 | 6.92      |
| 937571     | AD2-169 C    | 23.03     |
| 938371     | AE1-056 C    | 2.97      |
| 938771     | AE1-103 C O1 | 2.48      |
| 939181     | AE1-148 C O1 | 9.38      |
| 939371     | AE1-168 C    | 8.49      |
| 940241     | AE2-006      | 0.32      |
| 940661     | AE2-053      | 3.49      |
| 941541     | AE2-151 C    | 0.41      |
| 942371     | AE2-250 C O2 | 17.69     |
| 942451     | AE2-258      | 1.99      |
| 942461     | AE2-259 C O2 | 3.14      |
| 942711     | AE2-287 C O2 | 19.84     |
| 943171     | AE2-346 C    | 0.93      |
| CARR       | CARR         | 0.04      |
| CBM-S1     | CBM-S1       | 0.39      |
| CBM-S2     | CBM-S2       | 0.31      |
| CBM-W1     | CBM-W1       | 0.43      |
| CBM-W2     | CBM-W2       | 2.52      |
| CIN        | CIN          | 0.21      |
| CPLE       | CPLE         | 0.1       |
| IPL        | IPL          | 0.13      |
| LGEE       | LGEE         | 0.06      |
| MEC        | MEC          | 0.42      |
| MECS       | MECS         | 0.18      |
| RENSSELAER | RENSSELAER   | 0.03      |
| WEC        | WEC          | 0.05      |

## 14.5.6 Index 6

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720549 | 314561    | 6CAROLNA | DVP           | 314599  | 6ROA VAL | DVP         | 1      | DVP_P4-2:<br>238T2002 | breaker | 671.0      | 110.03                | 111.69                 | DC    | 24.84     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.44      |
| 314572 | 3EMPORIA     | 0.62      |
| 314578 | 3HORNRTN     | 3.69      |
| 314623 | 3WITAKRS     | 0.77      |
| 314704 | 3LAWRENC     | 0.3       |
| 315126 | 1ROARAP2     | 1.21      |
| 315131 | 1EDGECEMA    | 5.62      |
| 315132 | 1EDGECEMB    | 5.62      |
| 315136 | 1ROSEMG1     | 3.06      |
| 315137 | 1ROSEMS1     | 1.9       |
| 315138 | 1ROSEMG2     | 1.43      |
| 315139 | 1GASTONA     | 4.69      |
| 315141 | 1GASTONB     | 4.69      |
| 315150 | 1BUGGS 1     | 5.52      |
| 315151 | 1BUGGS 2     | 5.52      |
| 917342 | Z2-044 E     | 0.33      |
| 918492 | AA1-063AE OP | 2.18      |
| 919692 | AA2-053 E    | 3.13      |
| 919701 | AA2-057 C    | 4.15      |
| 919702 | AA2-057 E    | 2.08      |
| 920592 | AA2-165 E    | 0.27      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 3.1       |
| 923912 | AB2-031 E O1 | 1.53      |
| 923991 | AB2-040 C O1 | 1.24      |
| 923992 | AB2-040 E O1 | 8.34      |
| 924022 | AB2-043 E O1 | 2.74      |
| 924152 | AB2-059 E O1 | 3.09      |
| 924162 | AB2-060 E O1 | 2.23      |
| 924302 | AB2-077 E O1 | 0.7       |
| 924312 | AB2-078 E O1 | 0.7       |
| 924322 | AB2-079 E O1 | 0.7       |
| 924401 | AB2-089 C    | 1.54      |
| 924402 | AB2-089 E    | 0.79      |
| 924511 | AB2-100 C    | 21.43     |
| 924512 | AB2-100 E    | 10.55     |
| 925171 | AB2-174 C O1 | 10.03     |
| 925172 | AB2-174 E O1 | 9.07      |
| 925591 | AC1-034 C    | 3.88      |
| 925592 | AC1-034 E    | 2.93      |
| 925612 | AC1-036 E    | 0.36      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925781 | AC1-054 C O1 | 5.58      |
| 925782 | AC1-054 E O1 | 2.57      |
| 926071 | AC1-086 C    | 43.25     |
| 926072 | AC1-086 E    | 19.69     |
| 927141 | AC1-208 C    | 6.05      |
| 927142 | AC1-208 E    | 2.68      |
| 930402 | AB1-081 E O1 | 2.18      |
| 930861 | AB1-132 C O1 | 3.58      |
| 930862 | AB1-132 E O1 | 12.59     |
| 931231 | AB1-173 C    | 0.38      |
| 931232 | AB1-173 E    | 1.46      |
| 931241 | AB1-173AC    | 0.38      |
| 931242 | AB1-173AE    | 1.46      |
| 934201 | AD1-047 C    | 11.12     |
| 934202 | AD1-047 E    | 7.42      |
| 934231 | AD1-050 C    | 3.39      |
| 934232 | AD1-050 E    | 1.85      |
| 934331 | AD1-057 C O1 | 12.72     |
| 934332 | AD1-057 E O1 | 6.78      |
| 936261 | AD2-033 C    | 5.68      |
| 936262 | AD2-033 E    | 3.79      |
| 936361 | AD2-046 C O1 | 5.42      |
| 936362 | AD2-046 E O1 | 2.49      |
| 936481 | AD2-063 C O1 | 7.29      |
| 936482 | AD2-063 E O1 | 4.86      |
| 937571 | AD2-169 C    | 13.44     |
| 937572 | AD2-169 E    | 8.96      |
| 938174 | AE1-026 CBAT | 1.52      |
| 938175 | AE1-026 EBAT | 6.09      |
| 938661 | AE1-088      | 0.92      |
| 939071 | AE1-135 C O1 | 37.93     |
| 939072 | AE1-135 E O1 | 25.29     |
| 939181 | AE1-148 C O1 | 5.3       |
| 939182 | AE1-148 E O1 | 3.54      |
| 940241 | AE2-006      | 0.2       |
| 940481 | AE2-033 C    | 28.13     |
| 940482 | AE2-033 E    | 18.97     |
| 940571 | AE2-044 C    | 2.54      |
| 940572 | AE2-044 E    | 1.09      |
| 940661 | AE2-053      | 1.98      |
| 941951 | AE2-207      | 1.64      |
| 942371 | AE2-250 C O2 | 13.89     |
| 942372 | AE2-250 E O2 | 7.33      |
| 942451 | AE2-258      | 1.25      |
| 942471 | AE2-260 C O2 | 26.19     |
| 942472 | AE2-260 E O2 | 37.15     |
| 942711 | AE2-287 C O2 | 14.9      |
| 942712 | AE2-287 E O2 | 9.93      |
| CARR   | CARR         | 0.09      |
| CBM-S1 | CBM-S1       | 1.67      |
| CBM-S2 | CBM-S2       | 1.86      |
| CBM-W1 | CBM-W1       | 1.67      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-W2</b>     | CBM-W2     | 10.82            |
| <b>CIN</b>        | CIN        | 0.76             |
| <b>CPL</b>        | CPL        | 0.93             |
| <b>G-007</b>      | G-007      | 0.31             |
| <b>IPL</b>        | IPL        | 0.48             |
| <b>LGEE</b>       | LGEE       | 0.22             |
| <b>MEC</b>        | MEC        | 1.69             |
| <b>MECS</b>       | MECS       | 0.7              |
| <b>O-066</b>      | O-066      | 1.97             |
| <b>RENSSELAER</b> | RENSSELAER | 0.07             |
| <b>WEC</b>        | WEC        | 0.2              |

## 14.5.7 Index 7

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720552 | 314599    | 6ROA VAL | DVP           | 314266  | 6NORTHAMPTON | DVP         | 1      | DVP_P4-2:<br>238T2002 | breaker | 671.0      | 109.98                | 111.65                 | DC    | 24.84     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.44      |
| 314572 | 3EMPORIA     | 0.62      |
| 314578 | 3HORNRTN     | 3.69      |
| 314623 | 3WITAKRS     | 0.77      |
| 314704 | 3LAWRENC     | 0.3       |
| 315126 | 1ROARAP2     | 1.21      |
| 315131 | 1EDGECEMA    | 5.62      |
| 315132 | 1EDGECEMB    | 5.62      |
| 315136 | 1ROSEMG1     | 3.06      |
| 315137 | 1ROSEMS1     | 1.9       |
| 315138 | 1ROSEMG2     | 1.43      |
| 315139 | 1GASTONA     | 4.69      |
| 315141 | 1GASTONB     | 4.69      |
| 315150 | 1BUGGS 1     | 5.52      |
| 315151 | 1BUGGS 2     | 5.52      |
| 917342 | Z2-044 E     | 0.33      |
| 918492 | AA1-063AE OP | 2.18      |
| 919692 | AA2-053 E    | 3.13      |
| 919701 | AA2-057 C    | 4.15      |
| 919702 | AA2-057 E    | 2.08      |
| 920592 | AA2-165 E    | 0.27      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 3.1       |
| 923912 | AB2-031 E O1 | 1.53      |
| 923991 | AB2-040 C O1 | 1.24      |
| 923992 | AB2-040 E O1 | 8.34      |
| 924022 | AB2-043 E O1 | 2.74      |
| 924152 | AB2-059 E O1 | 3.09      |
| 924162 | AB2-060 E O1 | 2.23      |
| 924302 | AB2-077 E O1 | 0.7       |
| 924312 | AB2-078 E O1 | 0.7       |
| 924322 | AB2-079 E O1 | 0.7       |
| 924401 | AB2-089 C    | 1.54      |
| 924402 | AB2-089 E    | 0.79      |
| 924511 | AB2-100 C    | 21.43     |
| 924512 | AB2-100 E    | 10.55     |
| 925171 | AB2-174 C O1 | 10.03     |
| 925172 | AB2-174 E O1 | 9.07      |
| 925591 | AC1-034 C    | 3.88      |
| 925592 | AC1-034 E    | 2.93      |
| 925612 | AC1-036 E    | 0.36      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925781 | AC1-054 C O1 | 5.58      |
| 925782 | AC1-054 E O1 | 2.57      |
| 926071 | AC1-086 C    | 43.25     |
| 926072 | AC1-086 E    | 19.69     |
| 927141 | AC1-208 C    | 6.05      |
| 927142 | AC1-208 E    | 2.68      |
| 930402 | AB1-081 E O1 | 2.18      |
| 930861 | AB1-132 C O1 | 3.58      |
| 930862 | AB1-132 E O1 | 12.59     |
| 931231 | AB1-173 C    | 0.38      |
| 931232 | AB1-173 E    | 1.46      |
| 931241 | AB1-173AC    | 0.38      |
| 931242 | AB1-173AE    | 1.46      |
| 934201 | AD1-047 C    | 11.12     |
| 934202 | AD1-047 E    | 7.42      |
| 934231 | AD1-050 C    | 3.39      |
| 934232 | AD1-050 E    | 1.85      |
| 934331 | AD1-057 C O1 | 12.72     |
| 934332 | AD1-057 E O1 | 6.78      |
| 936261 | AD2-033 C    | 5.68      |
| 936262 | AD2-033 E    | 3.79      |
| 936361 | AD2-046 C O1 | 5.42      |
| 936362 | AD2-046 E O1 | 2.49      |
| 936481 | AD2-063 C O1 | 7.29      |
| 936482 | AD2-063 E O1 | 4.86      |
| 937571 | AD2-169 C    | 13.44     |
| 937572 | AD2-169 E    | 8.96      |
| 938174 | AE1-026 CBAT | 1.52      |
| 938175 | AE1-026 EBAT | 6.09      |
| 938661 | AE1-088      | 0.92      |
| 939071 | AE1-135 C O1 | 37.93     |
| 939072 | AE1-135 E O1 | 25.29     |
| 939181 | AE1-148 C O1 | 5.3       |
| 939182 | AE1-148 E O1 | 3.54      |
| 940241 | AE2-006      | 0.2       |
| 940481 | AE2-033 C    | 28.13     |
| 940482 | AE2-033 E    | 18.97     |
| 940571 | AE2-044 C    | 2.54      |
| 940572 | AE2-044 E    | 1.09      |
| 940661 | AE2-053      | 1.98      |
| 941951 | AE2-207      | 1.64      |
| 942371 | AE2-250 C O2 | 13.89     |
| 942372 | AE2-250 E O2 | 7.33      |
| 942451 | AE2-258      | 1.25      |
| 942471 | AE2-260 C O2 | 26.19     |
| 942472 | AE2-260 E O2 | 37.15     |
| 942711 | AE2-287 C O2 | 14.9      |
| 942712 | AE2-287 E O2 | 9.93      |
| CARR   | CARR         | 0.09      |
| CBM-S1 | CBM-S1       | 1.67      |
| CBM-S2 | CBM-S2       | 1.86      |
| CBM-W1 | CBM-W1       | 1.67      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-W2</b>     | CBM-W2     | 10.82            |
| <b>CIN</b>        | CIN        | 0.76             |
| <b>CPL</b>        | CPL        | 0.93             |
| <b>G-007</b>      | G-007      | 0.31             |
| <b>IPL</b>        | IPL        | 0.48             |
| <b>LGEE</b>       | LGEE       | 0.22             |
| <b>MEC</b>        | MEC        | 1.69             |
| <b>MECS</b>       | MECS       | 0.7              |
| <b>O-066</b>      | O-066      | 1.97             |
| <b>RENSSELAER</b> | RENSSELAER | 0.07             |
| <b>WEC</b>        | WEC        | 0.2              |

## 14.5.8 Index 8

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720388 | 314677    | 6BUCKING | DVP           | 314747  | 6BREMO | DVP         | 1      | DVP_P4-2:<br>511T591 | breaker | 699.0      | 115.14                | 116.23                 | DC    | 17.04     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.69      |
| 315150 | 1BUGGS 1     | 13.27     |
| 315151 | 1BUGGS 2     | 13.27     |
| 315153 | 1CLOVER1     | 15.93     |
| 315154 | 1CLOVER2     | 15.72     |
| 315159 | 1KERR 2      | 1.04      |
| 315266 | 1PLYWOOD A   | 1.07      |
| 924021 | AB2-043 C O1 | 0.53      |
| 924022 | AB2-043 E O1 | 7.09      |
| 924031 | AB2-045 C    | 1.15      |
| 924032 | AB2-045 E    | 4.39      |
| 924161 | AB2-060 C O1 | 1.55      |
| 924162 | AB2-060 E O1 | 6.0       |
| 924301 | AB2-077 C O1 | 0.33      |
| 924302 | AB2-077 E O1 | 1.8       |
| 924311 | AB2-078 C O1 | 0.33      |
| 924312 | AB2-078 E O1 | 1.8       |
| 924321 | AB2-079 C O1 | 0.33      |
| 924322 | AB2-079 E O1 | 1.8       |
| 924401 | AB2-089 C    | 1.92      |
| 924402 | AB2-089 E    | 0.99      |
| 925611 | AC1-036 C    | 0.22      |
| 925612 | AC1-036 E    | 1.66      |
| 925781 | AC1-054 C O1 | 6.07      |
| 925782 | AC1-054 E O1 | 2.8       |
| 925831 | AC1-062      | 0.09      |
| 925991 | AC1-075 C    | 4.97      |
| 925992 | AC1-075 E    | 2.82      |
| 926021 | AC1-080 C    | 1.66      |
| 926022 | AC1-080 E    | 0.93      |
| 926271 | AC1-105 C O1 | 6.78      |
| 926272 | AC1-105 E O1 | 3.38      |
| 927251 | AC1-221 C    | 1.67      |
| 927252 | AC1-221 E    | 1.67      |
| 927261 | AC1-222 C    | 4.08      |
| 927262 | AC1-222 E    | 3.88      |
| 932511 | AC2-071 C    | 1.13      |
| 932512 | AC2-071 E    | 4.67      |
| 932761 | AC2-100 C    | 3.84      |
| 932762 | AC2-100 E    | 1.88      |
| 934231 | AD1-050 C    | 4.23      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 934232  | AD1-050 E    | 2.31      |
| 934311  | AD1-055 C    | 2.83      |
| 934312  | AD1-055 E    | 0.73      |
| 934341  | AD1-058 C    | 4.18      |
| 934342  | AD1-058 E    | 1.06      |
| 934611  | AD1-087 C O1 | 12.07     |
| 934612  | AD1-087 E O1 | 5.67      |
| 934621  | AD1-088 C    | 29.91     |
| 934622  | AD1-088 E    | 14.04     |
| 934991  | AD1-131 C    | 1.37      |
| 934992  | AD1-131 E    | 0.91      |
| 935171  | AD1-152 C O1 | 12.0      |
| 935172  | AD1-152 E O1 | 8.0       |
| 935221  | AD1-157 C    | 0.47      |
| 935222  | AD1-157 E    | 2.59      |
| 935231  | AD1-160 C    | 2.85      |
| 935232  | AD1-160 E    | 3.93      |
| 936261  | AD2-033 C    | 23.77     |
| 936262  | AD2-033 E    | 15.84     |
| 936331  | AD2-043 C    | 5.29      |
| 936332  | AD2-043 E    | 6.26      |
| 936361  | AD2-046 C O1 | 9.36      |
| 936362  | AD2-046 E O1 | 4.31      |
| 936481  | AD2-063 C O1 | 23.83     |
| 936482  | AD2-063 E O1 | 15.89     |
| 937481  | AD2-202 C O1 | 3.32      |
| 937482  | AD2-202 E O1 | 1.67      |
| 938371  | AE1-056 C    | 16.75     |
| 938372  | AE1-056 E    | 9.15      |
| 939181  | AE1-148 C O1 | 9.41      |
| 939182  | AE1-148 E O1 | 6.27      |
| 939371  | AE1-168 C    | 33.76     |
| 939372  | AE1-168 E    | 22.5      |
| 940241  | AE2-006      | 0.94      |
| 940661  | AE2-053      | 3.5       |
| 941791  | AE2-182 C    | 5.41      |
| 941792  | AE2-182 E    | 2.55      |
| 942451  | AE2-258      | 3.22      |
| 942461  | AE2-259 C O2 | 30.47     |
| 942462  | AE2-259 E O2 | 20.32     |
| 942711  | AE2-287 C O2 | 10.23     |
| 942712  | AE2-287 E O2 | 6.82      |
| 942751  | AE2-291 C O2 | 6.4       |
| 942752  | AE2-291 E O2 | 4.27      |
| 942761  | AE2-292 C O2 | 8.71      |
| 942762  | AE2-292 E O2 | 5.81      |
| 943051  | AE2-328 C    | 34.03     |
| 943052  | AE2-328 E    | 15.94     |
| AA2-074 | AA2-074      | 2.39      |
| CARR    | CARR         | 0.25      |
| CBM-S1  | CBM-S1       | 5.4       |
| CBM-S2  | CBM-S2       | 6.67      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-W1</b>     | CBM-W1     | 5.03             |
| <b>CBM-W2</b>     | CBM-W2     | 34.8             |
| <b>CIN</b>        | CIN        | 2.29             |
| <b>CPL</b>        | CPL        | 3.51             |
| <b>G-007</b>      | G-007      | 0.84             |
| <b>IPL</b>        | IPL        | 1.43             |
| <b>LGEE</b>       | LGEE       | 0.66             |
| <b>MEC</b>        | MEC        | 5.23             |
| <b>MECS</b>       | MECS       | 1.97             |
| <b>O-066</b>      | O-066      | 5.34             |
| <b>RENSSELAER</b> | RENSSELAER | 0.2              |
| <b>WEC</b>        | WEC        | 0.61             |

## 14.5.9 Index 9

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720403 | 314692    | 6FARMVIL | DVP           | 314677  | 6BUCKING | DVP         | 1      | DVP_P4-2:<br>511T591 | breaker | 684.0      | 113.43                | 114.55                 | DC    | 17.06     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.69      |
| 315150 | 1BUGGS 1     | 13.28     |
| 315151 | 1BUGGS 2     | 13.28     |
| 315153 | 1CLOVER1     | 15.94     |
| 315154 | 1CLOVER2     | 15.73     |
| 315159 | 1KERR 2      | 1.04      |
| 315266 | 1PLYWOOD A   | 1.07      |
| 924021 | AB2-043 C O1 | 0.53      |
| 924022 | AB2-043 E O1 | 7.09      |
| 924161 | AB2-060 C O1 | 1.55      |
| 924162 | AB2-060 E O1 | 6.0       |
| 924301 | AB2-077 C O1 | 0.33      |
| 924302 | AB2-077 E O1 | 1.8       |
| 924311 | AB2-078 C O1 | 0.33      |
| 924312 | AB2-078 E O1 | 1.8       |
| 924321 | AB2-079 C O1 | 0.33      |
| 924322 | AB2-079 E O1 | 1.8       |
| 924401 | AB2-089 C    | 1.92      |
| 924402 | AB2-089 E    | 0.99      |
| 925611 | AC1-036 C    | 0.22      |
| 925612 | AC1-036 E    | 1.66      |
| 925781 | AC1-054 C O1 | 6.08      |
| 925782 | AC1-054 E O1 | 2.8       |
| 925831 | AC1-062      | 0.09      |
| 925991 | AC1-075 C    | 4.97      |
| 925992 | AC1-075 E    | 2.82      |
| 926021 | AC1-080 C    | 1.66      |
| 926022 | AC1-080 E    | 0.94      |
| 926271 | AC1-105 C O1 | 6.79      |
| 926272 | AC1-105 E O1 | 3.38      |
| 927251 | AC1-221 C    | 1.67      |
| 927252 | AC1-221 E    | 1.67      |
| 927261 | AC1-222 C    | 4.08      |
| 927262 | AC1-222 E    | 3.89      |
| 932761 | AC2-100 C    | 3.85      |
| 932762 | AC2-100 E    | 1.88      |
| 934231 | AD1-050 C    | 4.23      |
| 934232 | AD1-050 E    | 2.31      |
| 934311 | AD1-055 C    | 2.83      |
| 934312 | AD1-055 E    | 0.73      |
| 934341 | AD1-058 C    | 4.19      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 934342  | AD1-058 E    | 1.06      |
| 934611  | AD1-087 C O1 | 12.08     |
| 934612  | AD1-087 E O1 | 5.68      |
| 934621  | AD1-088 C    | 29.92     |
| 934622  | AD1-088 E    | 14.04     |
| 934991  | AD1-131 C    | 1.37      |
| 934992  | AD1-131 E    | 0.92      |
| 935171  | AD1-152 C O1 | 12.0      |
| 935172  | AD1-152 E O1 | 8.0       |
| 935221  | AD1-157 C    | 0.47      |
| 935222  | AD1-157 E    | 2.59      |
| 935231  | AD1-160 C    | 2.85      |
| 935232  | AD1-160 E    | 3.93      |
| 936261  | AD2-033 C    | 23.78     |
| 936262  | AD2-033 E    | 15.85     |
| 936331  | AD2-043 C    | 5.29      |
| 936332  | AD2-043 E    | 6.26      |
| 936361  | AD2-046 C O1 | 9.37      |
| 936362  | AD2-046 E O1 | 4.31      |
| 936481  | AD2-063 C O1 | 23.85     |
| 936482  | AD2-063 E O1 | 15.9      |
| 937481  | AD2-202 C O1 | 3.33      |
| 937482  | AD2-202 E O1 | 1.68      |
| 938371  | AE1-056 C    | 16.75     |
| 938372  | AE1-056 E    | 9.15      |
| 939181  | AE1-148 C O1 | 9.42      |
| 939182  | AE1-148 E O1 | 6.28      |
| 939371  | AE1-168 C    | 33.77     |
| 939372  | AE1-168 E    | 22.51     |
| 940241  | AE2-006      | 0.94      |
| 940661  | AE2-053      | 3.5       |
| 941791  | AE2-182 C    | 5.41      |
| 941792  | AE2-182 E    | 2.55      |
| 942451  | AE2-258      | 3.23      |
| 942461  | AE2-259 C O2 | 30.48     |
| 942462  | AE2-259 E O2 | 20.32     |
| 942711  | AE2-287 C O2 | 10.24     |
| 942712  | AE2-287 E O2 | 6.82      |
| 942751  | AE2-291 C O2 | 6.41      |
| 942752  | AE2-291 E O2 | 4.28      |
| 942761  | AE2-292 C O2 | 8.72      |
| 942762  | AE2-292 E O2 | 5.82      |
| 943051  | AE2-328 C    | 34.04     |
| 943052  | AE2-328 E    | 15.94     |
| AA2-074 | AA2-074      | 2.39      |
| CARR    | CARR         | 0.25      |
| CBM-S1  | CBM-S1       | 5.45      |
| CBM-S2  | CBM-S2       | 6.69      |
| CBM-W1  | CBM-W1       | 5.11      |
| CBM-W2  | CBM-W2       | 35.13     |
| CIN     | CIN          | 2.33      |
| CPL     | CPL          | 3.52      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007</b>      | G-007      | 0.82             |
| <b>IPL</b>        | IPL        | 1.45             |
| <b>LGEE</b>       | LGEE       | 0.67             |
| <b>MEC</b>        | MEC        | 5.3              |
| <b>MECS</b>       | MECS       | 2.02             |
| <b>O-066</b>      | O-066      | 5.24             |
| <b>RENSSELAER</b> | RENSSELAER | 0.2              |
| <b>WEC</b>        | WEC        | 0.62             |

## 14.5.10 Index 10

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090501 | 314712    | 30TTER R | DVP           | 314666  | 3ALTVSTA | DVP         | 1      | DVP_P1-2: LN 296-A | single | 224.66     | 79.62                 | 81.41                  | DC    | 4.02      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.1       |
| 315150 | 1BUGGS 1     | 6.53      |
| 315151 | 1BUGGS 2     | 6.53      |
| 315153 | 1CLOVER1     | 3.49      |
| 315154 | 1CLOVER2     | 3.45      |
| 315158 | 1KERR 1      | 0.1       |
| 315159 | 1KERR 2      | 0.4       |
| 315160 | 1KERR 3      | 0.39      |
| 315161 | 1KERR 4      | 0.39      |
| 315162 | 1KERR 5      | 0.39      |
| 315163 | 1KERR 6      | 0.39      |
| 315164 | 1KERR 7      | 0.39      |
| 315266 | 1PLYWOOD A   | 0.86      |
| 924021 | AB2-043 C O1 | 0.19      |
| 924161 | AB2-060 C O1 | 0.53      |
| 924301 | AB2-077 C O1 | 0.12      |
| 924311 | AB2-078 C O1 | 0.12      |
| 924321 | AB2-079 C O1 | 0.12      |
| 924401 | AB2-089 C    | 0.75      |
| 925611 | AC1-036 C    | 0.05      |
| 925781 | AC1-054 C O1 | 2.38      |
| 925831 | AC1-062      | 0.01      |
| 925991 | AC1-075 C    | 17.18     |
| 926021 | AC1-080 C    | 5.74      |
| 926271 | AC1-105 C O1 | 5.27      |
| 927251 | AC1-221 C    | 1.66      |
| 927261 | AC1-222 C    | 5.35      |
| 932761 | AC2-100 C    | 3.82      |
| 934231 | AD1-050 C    | 1.65      |
| 934311 | AD1-055 C    | 3.71      |
| 934341 | AD1-058 C    | 4.16      |
| 934611 | AD1-087 C O1 | 4.31      |
| 934621 | AD1-088 C    | 4.21      |
| 934991 | AD1-131 C    | 1.36      |
| 935171 | AD1-152 C O1 | 4.28      |
| 935221 | AD1-157 C    | 0.06      |
| 935231 | AD1-160 C    | 0.38      |
| 936261 | AD2-033 C    | 5.61      |
| 936331 | AD2-043 C    | 7.25      |
| 936361 | AD2-046 C O1 | 3.54      |
| 936481 | AD2-063 C O1 | 6.88      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 937481     | AD2-202 C O1 | 1.19      |
| 938371     | AE1-056 C    | 2.23      |
| 939181     | AE1-148 C O1 | 3.53      |
| 939371     | AE1-168 C    | 5.76      |
| 940241     | AE2-006      | 0.2       |
| 940661     | AE2-053      | 1.31      |
| 941791     | AE2-182 C    | 0.76      |
| 942451     | AE2-258      | 1.14      |
| 942711     | AE2-287 C O2 | 4.02      |
| 942751     | AE2-291 C O2 | 34.29     |
| 942761     | AE2-292 C O2 | 39.4      |
| BLUEG      | BLUEG        | 3.49      |
| CALDERWOOD | CALDERWOOD   | 0.3       |
| CANNELTON  | CANNELTON    | 0.2       |
| CATAWBA    | CATAWBA      | 0.05      |
| CBM-N      | CBM-N        | 0.1       |
| CHEOAH     | CHEOAH       | 0.27      |
| CHILHOWEE  | CHILHOWEE    | 0.1       |
| COFFEEN    | COFFEEN      | 0.34      |
| COTTONWOOD | COTTONWOOD   | 1.14      |
| CPL        | CPL          | 0.28      |
| DUCKCREEK  | DUCKCREEK    | 0.74      |
| EDWARDS    | EDWARDS      | 0.34      |
| ELMERSMITH | ELMERSMITH   | 0.35      |
| FARMERCITY | FARMERCITY   | 0.22      |
| G-007A     | G-007A       | 0.51      |
| GIBSON     | GIBSON       | 0.14      |
| NEWTON     | NEWTON       | 0.9       |
| NYISO      | NYISO        | 0.42      |
| PRAIRIE    | PRAIRIE      | 1.62      |
| SANTEETLA  | SANTEETLA    | 0.08      |
| SMITHLAND  | SMITHLAND    | 0.13      |
| TATANKA    | TATANKA      | 0.4       |
| TILTON     | TILTON       | 0.42      |
| TRIMBLE    | TRIMBLE      | 0.39      |
| TVA        | TVA          | 1.01      |
| UNIONPOWER | UNIONPOWER   | 0.38      |
| VFT        | VFT          | 1.34      |

#### 14.5.11 Index 11

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS     | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|------------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090779 | 314747    | 6BREMO   | DVP           | 313867  | 6BREMODIST | DVP         | 1      | DVP_P1-2: LN 556 | single | 661.76     | 108.05                | 109.07                 | DC    | 6.74      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.37      |
| 314704 | 3LAWRENC     | 0.12      |
| 315126 | 1ROARAP2     | 0.33      |
| 315150 | 1BUGGS 1     | 7.72      |
| 315151 | 1BUGGS 2     | 7.72      |
| 315153 | 1CLOVER1     | 8.63      |
| 315154 | 1CLOVER2     | 8.52      |
| 315158 | 1KERR 1      | 0.15      |
| 315159 | 1KERR 2      | 0.63      |
| 315160 | 1KERR 3      | 0.62      |
| 315161 | 1KERR 4      | 0.62      |
| 315162 | 1KERR 5      | 0.62      |
| 315163 | 1KERR 6      | 0.62      |
| 315164 | 1KERR 7      | 0.62      |
| 315170 | 1BREMO 3     | 21.85     |
| 315171 | 1BREMO 4     | 48.01     |
| 315191 | 1BEARGRDN G1 | 7.96      |
| 315192 | 1BEARGRDN G2 | 7.96      |
| 315193 | 1BEARGRDN S1 | 16.37     |
| 315266 | 1PLYWOOD A   | 0.61      |
| 920291 | AA2-127      | 1.65      |
| 923861 | AB2-026 C    | 0.36      |
| 923911 | AB2-031 C O1 | 0.76      |
| 923991 | AB2-040 C O1 | 0.3       |
| 924021 | AB2-043 C O1 | 0.3       |
| 924031 | AB2-045 C    | 0.59      |
| 924161 | AB2-060 C O1 | 0.88      |
| 924301 | AB2-077 C O1 | 0.19      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924401 | AB2-089 C    | 1.19      |
| 925171 | AB2-174 C O1 | 2.39      |
| 925611 | AC1-036 C    | 0.12      |
| 925781 | AC1-054 C O1 | 3.84      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 3.05      |
| 926021 | AC1-080 C    | 1.02      |
| 926271 | AC1-105 C O1 | 3.87      |
| 927251 | AC1-221 C    | 1.01      |
| 927261 | AC1-222 C    | 2.36      |
| 931231 | AB1-173 C    | 0.09      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.09      |
| 932511     | AC2-071 C    | 0.58      |
| 932761     | AC2-100 C    | 2.33      |
| 933501     | AC2-165 C    | 14.27     |
| 934201     | AD1-047 C    | 2.71      |
| 934231     | AD1-050 C    | 2.63      |
| 934311     | AD1-055 C    | 1.64      |
| 934341     | AD1-058 C    | 2.53      |
| 934611     | AD1-087 C O1 | 6.64      |
| 934621     | AD1-088 C    | 15.85     |
| 934991     | AD1-131 C    | 0.83      |
| 935171     | AD1-152 C O1 | 6.6       |
| 935221     | AD1-157 C    | 0.25      |
| 935231     | AD1-160 C    | 1.51      |
| 936261     | AD2-033 C    | 13.05     |
| 936331     | AD2-043 C    | 3.06      |
| 936361     | AD2-046 C O1 | 5.59      |
| 936481     | AD2-063 C O1 | 13.31     |
| 937481     | AD2-202 C O1 | 1.83      |
| 937571     | AD2-169 C    | 3.35      |
| 938371     | AE1-056 C    | 8.89      |
| 938551     | AE1-074 C    | 0.78      |
| 938561     | AE1-075 C    | 2.6       |
| 938821     | AE1-108 C O1 | 27.5      |
| 939181     | AE1-148 C O1 | 5.6       |
| 939371     | AE1-168 C    | 18.15     |
| 939841     | AE1-220 C O1 | 8.76      |
| 940241     | AE2-006      | 0.51      |
| 940661     | AE2-053      | 2.08      |
| 941011     | AE2-092 C    | 16.65     |
| 941791     | AE2-182 C    | 2.87      |
| 942371     | AE2-250 C O2 | 3.13      |
| 942451     | AE2-258      | 1.84      |
| 942461     | AE2-259 C O2 | 15.98     |
| 942711     | AE2-287 C O2 | 6.74      |
| 942751     | AE2-291 C O2 | 4.14      |
| 942761     | AE2-292 C O2 | 5.51      |
| 943051     | AE2-328 C    | 17.8      |
| AA2-074    | AA2-074      | 1.72      |
| CARR       | CARR         | 0.26      |
| CBM-S1     | CBM-S1       | 2.58      |
| CBM-S2     | CBM-S2       | 4.56      |
| CBM-W1     | CBM-W1       | 0.87      |
| CBM-W2     | CBM-W2       | 15.09     |
| CIN        | CIN          | 0.48      |
| CPL        | CPL          | 2.53      |
| IPL        | IPL          | 0.27      |
| LGEE       | LGEE         | 0.14      |
| MEC        | MEC          | 1.66      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.12      |

## 14.5.12 Index 12

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720432 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 1      | DVP_P4-2:<br>H2T2068 | breaker | 264.5      | 94.14                 | 96.39                  | DC    | 13.21     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315150 | 1BUGGS 1     | 16.56     |
| 315151 | 1BUGGS 2     | 16.56     |
| 315156 | 1HALLBR1     | 1.0       |
| 315165 | 1HURT 1      | 5.69      |
| 315166 | 1HURT 2      | 5.69      |
| 315266 | 1PLYWOOD A   | 2.43      |
| 924021 | AB2-043 C O1 | 0.44      |
| 924022 | AB2-043 E O1 | 5.94      |
| 924161 | AB2-060 C O1 | 1.25      |
| 924162 | AB2-060 E O1 | 4.84      |
| 924301 | AB2-077 C O1 | 0.29      |
| 924302 | AB2-077 E O1 | 1.58      |
| 924311 | AB2-078 C O1 | 0.29      |
| 924312 | AB2-078 E O1 | 1.58      |
| 924321 | AB2-079 C O1 | 0.29      |
| 924322 | AB2-079 E O1 | 1.58      |
| 924401 | AB2-089 C    | 1.56      |
| 924402 | AB2-089 E    | 0.8       |
| 925611 | AC1-036 C    | 0.1       |
| 925612 | AC1-036 E    | 0.78      |
| 925661 | AC1-042 C    | 1.79      |
| 925662 | AC1-042 E    | 2.92      |
| 925781 | AC1-054 C O1 | 4.84      |
| 925782 | AC1-054 E O1 | 2.23      |
| 925991 | AC1-075 C    | 12.59     |
| 925992 | AC1-075 E    | 7.13      |
| 926021 | AC1-080 C    | 4.21      |
| 926022 | AC1-080 E    | 2.37      |
| 926271 | AC1-105 C O1 | 14.84     |
| 926272 | AC1-105 E O1 | 7.39      |
| 926641 | AC1-145 C    | 2.13      |
| 926642 | AC1-145 E    | 3.48      |
| 927261 | AC1-222 C    | 10.59     |
| 927262 | AC1-222 E    | 10.08     |
| 934231 | AD1-050 C    | 3.43      |
| 934232 | AD1-050 E    | 1.88      |
| 934311 | AD1-055 C    | 7.35      |
| 934312 | AD1-055 E    | 1.9       |
| 935222 | AD1-157 E    | 0.63      |
| 935231 | AD1-160 C    | 0.69      |
| 935232 | AD1-160 E    | 0.95      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 936261     | AD2-033 C    | 12.4      |
| 936262     | AD2-033 E    | 8.26      |
| 936331     | AD2-043 C    | 13.72     |
| 936332     | AD2-043 E    | 16.24     |
| 936361     | AD2-046 C O1 | 7.81      |
| 936362     | AD2-046 E O1 | 3.59      |
| 936481     | AD2-063 C O1 | 15.84     |
| 936482     | AD2-063 E O1 | 10.56     |
| 938371     | AE1-056 C    | 4.05      |
| 938372     | AE1-056 E    | 2.21      |
| 939181     | AE1-148 C O1 | 7.86      |
| 939182     | AE1-148 E O1 | 5.24      |
| 939371     | AE1-168 C    | 11.58     |
| 939372     | AE1-168 E    | 7.72      |
| 939941     | AE1-230 C1   | 0.81      |
| 939942     | AE1-230 E1   | 0.54      |
| 939943     | AE1-230 E2   | 0.48      |
| 940241     | AE2-006      | 0.44      |
| 940661     | AE2-053      | 2.92      |
| 941801     | AE2-185 C    | 5.05      |
| 941802     | AE2-185 E    | 1.68      |
| 941821     | AE2-187 C    | 5.05      |
| 941822     | AE2-187 E    | 1.68      |
| 942331     | AE2-246      | 1.57      |
| 942451     | AE2-258      | 2.7       |
| 942461     | AE2-259 C O2 | 4.29      |
| 942462     | AE2-259 E O2 | 2.86      |
| 942671     | AE2-283 C    | 4.45      |
| 942672     | AE2-283 E    | 2.34      |
| 942711     | AE2-287 C O2 | 7.93      |
| 942712     | AE2-287 E O2 | 5.28      |
| 942751     | AE2-291 C O2 | 15.87     |
| 942752     | AE2-291 E O2 | 10.58     |
| 942761     | AE2-292 C O2 | 21.81     |
| 942762     | AE2-292 E O2 | 14.54     |
| BLUEG      | BLUEG        | 2.18      |
| CALDERWOOD | CALDERWOOD   | 0.66      |
| CANNELTON  | CANNELTON    | 0.16      |
| CATAWBA    | CATAWBA      | 0.78      |
| CBM-N      | CBM-N        | 0.03      |
| CHEOAH     | CHEOAH       | 0.62      |
| CHILHOWEE  | CHILHOWEE    | 0.21      |
| COFFEEN    | COFFEEN      | 0.29      |
| COTTONWOOD | COTTONWOOD   | 2.09      |
| DUCKCREEK  | DUCKCREEK    | 0.57      |
| EDWARDS    | EDWARDS      | 0.25      |
| ELMERSMITH | ELMERSMITH   | 0.3       |
| FARMERCITY | FARMERCITY   | 0.22      |
| G-007A     | G-007A       | 0.16      |
| GIBSON     | GIBSON       | 0.1       |
| HAMLET     | HAMLET       | 1.48      |
| NEWTON     | NEWTON       | 0.74      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>NYISO</b>      | NYISO      | 0.14             |
| <b>PRAIRIE</b>    | PRAIRIE    | 1.67             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.19             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.16             |
| <b>TATANKA</b>    | TATANKA    | 0.36             |
| <b>TILTON</b>     | TILTON     | 0.29             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.24             |
| <b>TVA</b>        | TVA        | 1.73             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.93             |
| <b>VFT</b>        | VFT        | 0.43             |

### 14.5.13 Index 13

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME      | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|--------------|-------------|--------|----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720473 | 314696    | 3SEEDGE HILL | DVP           | 314697  | 6SEEDGE HILL | DVP         | 2      | DVP_P4-2: 3202 | breaker | 279.1      | 90.37                 | 92.75                  | DC    | 14.77     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315150 | 1BUGGS 1     | 18.94     |
| 315151 | 1BUGGS 2     | 18.94     |
| 315156 | 1HALLBR1     | 1.2       |
| 315165 | 1HURT 1      | 6.78      |
| 315166 | 1HURT 2      | 6.78      |
| 315266 | 1PLYWOOD A   | 2.78      |
| 924021 | AB2-043 C O1 | 0.5       |
| 924022 | AB2-043 E O1 | 6.68      |
| 924161 | AB2-060 C O1 | 1.41      |
| 924162 | AB2-060 E O1 | 5.44      |
| 924301 | AB2-077 C O1 | 0.33      |
| 924302 | AB2-077 E O1 | 1.78      |
| 924311 | AB2-078 C O1 | 0.33      |
| 924312 | AB2-078 E O1 | 1.78      |
| 924321 | AB2-079 C O1 | 0.33      |
| 924322 | AB2-079 E O1 | 1.78      |
| 924401 | AB2-089 C    | 1.83      |
| 924402 | AB2-089 E    | 0.94      |
| 925611 | AC1-036 C    | 0.11      |
| 925612 | AC1-036 E    | 0.84      |
| 925661 | AC1-042 C    | 2.17      |
| 925662 | AC1-042 E    | 3.54      |
| 925781 | AC1-054 C O1 | 5.69      |
| 925782 | AC1-054 E O1 | 2.62      |
| 925991 | AC1-075 C    | 14.49     |
| 925992 | AC1-075 E    | 8.21      |
| 926021 | AC1-080 C    | 4.84      |
| 926022 | AC1-080 E    | 2.72      |
| 926271 | AC1-105 C O1 | 16.91     |
| 926272 | AC1-105 E O1 | 8.42      |
| 926641 | AC1-145 C    | 2.58      |
| 926642 | AC1-145 E    | 4.21      |
| 927261 | AC1-222 C    | 12.1      |
| 927262 | AC1-222 E    | 11.52     |
| 934231 | AD1-050 C    | 4.03      |
| 934232 | AD1-050 E    | 2.2       |
| 934311 | AD1-055 C    | 8.4       |
| 934312 | AD1-055 E    | 2.17      |
| 935222 | AD1-157 E    | 0.61      |
| 935231 | AD1-160 C    | 0.67      |
| 935232 | AD1-160 E    | 0.92      |
| 936261 | AD2-033 C    | 13.5      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 936262     | AD2-033 E    | 9.0       |
| 936331     | AD2-043 C    | 15.68     |
| 936332     | AD2-043 E    | 18.56     |
| 936361     | AD2-046 C O1 | 9.1       |
| 936362     | AD2-046 E O1 | 4.18      |
| 936481     | AD2-063 C O1 | 17.58     |
| 936482     | AD2-063 E O1 | 11.72     |
| 938371     | AE1-056 C    | 3.94      |
| 938372     | AE1-056 E    | 2.15      |
| 939181     | AE1-148 C O1 | 9.12      |
| 939182     | AE1-148 E O1 | 6.08      |
| 939371     | AE1-168 C    | 12.01     |
| 939372     | AE1-168 E    | 8.01      |
| 939941     | AE1-230 C1   | 0.98      |
| 939942     | AE1-230 E1   | 0.65      |
| 939943     | AE1-230 E2   | 0.58      |
| 940241     | AE2-006      | 0.47      |
| 940661     | AE2-053      | 3.39      |
| 941801     | AE2-185 C    | 6.11      |
| 941802     | AE2-185 E    | 2.04      |
| 941821     | AE2-187 C    | 6.11      |
| 941822     | AE2-187 E    | 2.04      |
| 942331     | AE2-246      | 1.89      |
| 942451     | AE2-258      | 3.04      |
| 942671     | AE2-283 C    | 5.38      |
| 942672     | AE2-283 E    | 2.82      |
| 942711     | AE2-287 C O2 | 8.86      |
| 942712     | AE2-287 E O2 | 5.91      |
| 942751     | AE2-291 C O2 | 18.4      |
| 942752     | AE2-291 E O2 | 12.26     |
| 942761     | AE2-292 C O2 | 25.2      |
| 942762     | AE2-292 E O2 | 16.8      |
| CALDERWOOD | CALDERWOOD   | 0.15      |
| CARR       | CARR         | 0.03      |
| CATAWBA    | CATAWBA      | 0.3       |
| CBM-W1     | CBM-W1       | 0.38      |
| CHEOAH     | CHEOAH       | 0.14      |
| CHILHOWEE  | CHILHOWEE    | 0.05      |
| CIN        | CIN          | 0.21      |
| COTTONWOOD | COTTONWOOD   | 0.39      |
| FARMERCITY | FARMERCITY   | 0.0       |
| G-007      | G-007        | 0.12      |
| HAMLET     | HAMLET       | 0.67      |
| IPL        | IPL          | 0.14      |
| LGEE       | LGEE         | 0.07      |
| MEC        | MEC          | 0.07      |
| MECS       | MECS         | 0.37      |
| O-066      | O-066        | 0.73      |
| PRAIRIE    | PRAIRIE      | 0.02      |
| RENSSELAER | RENSSELAER   | 0.02      |
| SANTEETLA  | SANTEETLA    | 0.04      |
| SMITHLAND  | SMITHLAND    | 0.01      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TVA</b>        | TVA        | 0.29             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.23             |
| <b>WEC</b>        | WEC        | 0.05             |

#### 14.5.14 Index 14

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME      | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 7363460 | 242631    | 05EDAN 1 | AEP           | 242620  | 05DANVL2 | AEP         | 1      | AEP_P1-2_#1377 | single | 402.0      | 114.25                | 114.55                 | DC    | 4.54      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315126 | 1ROARAP2     | 0.36      |
| 315128 | 1ROARAP4     | 0.35      |
| 315131 | 1EDGECEMA    | 4.19      |
| 315132 | 1EDGECEMB    | 4.19      |
| 315136 | 1ROSEMG1     | 0.58      |
| 315137 | 1ROSEMS1     | 0.36      |
| 315138 | 1ROSEMG2     | 0.27      |
| 315150 | 1BUGGS 1     | 4.69      |
| 315151 | 1BUGGS 2     | 4.69      |
| 315158 | 1KERR 1      | 0.11      |
| 315159 | 1KERR 2      | 0.45      |
| 315160 | 1KERR 3      | 0.45      |
| 315161 | 1KERR 4      | 0.45      |
| 315162 | 1KERR 5      | 0.45      |
| 315163 | 1KERR 6      | 0.45      |
| 315164 | 1KERR 7      | 0.45      |
| 315266 | 1PLYWOOD A   | 0.39      |
| 917341 | Z2-044 C     | 0.07      |
| 917511 | Z2-088 C OP1 | 0.45      |
| 918531 | AA1-067 C    | 0.08      |
| 919701 | AA2-057 C    | 2.99      |
| 920591 | AA2-165 C    | 0.05      |
| 924021 | AB2-043 C O1 | 0.15      |
| 924151 | AB2-059 C O1 | 0.58      |
| 924161 | AB2-060 C O1 | 0.42      |
| 924301 | AB2-077 C O1 | 0.09      |
| 924311 | AB2-078 C O1 | 0.09      |
| 924321 | AB2-079 C O1 | 0.09      |
| 924401 | AB2-089 C    | 0.91      |
| 924491 | AB2-098 C    | 0.22      |
| 925591 | AC1-034 C    | 3.08      |
| 925781 | AC1-054 C O1 | 3.01      |
| 926051 | AC1-083 C O1 | 4.16      |
| 926071 | AC1-086 C    | 7.23      |
| 926201 | AC1-098 C    | 2.39      |
| 926211 | AC1-099 C    | 0.8       |
| 926271 | AC1-105 C O1 | 2.37      |
| 927021 | AC1-189 C    | 3.44      |
| 927141 | AC1-208 C    | 3.57      |
| 927251 | AC1-221 C    | 1.58      |
| 927261 | AC1-222 C    | 1.53      |
| 930401 | AB1-081 C O1 | 0.49      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 932631     | AC2-084 C    | 3.41      |
| 932761     | AC2-100 C    | 3.64      |
| 933941     | AD1-017 C    | 0.83      |
| 934231     | AD1-050 C    | 2.0       |
| 934311     | AD1-055 C    | 1.06      |
| 934331     | AD1-057 C O1 | 4.06      |
| 934341     | AD1-058 C    | 3.96      |
| 934611     | AD1-087 C O1 | 3.35      |
| 934991     | AD1-131 C    | 1.3       |
| 935171     | AD1-152 C O1 | 3.33      |
| 936161     | AD2-022 C O1 | 10.73     |
| 936171     | AD2-023 C O1 | 6.17      |
| 936261     | AD2-033 C    | 4.56      |
| 936331     | AD2-043 C    | 1.98      |
| 936361     | AD2-046 C O1 | 3.79      |
| 936481     | AD2-063 C O1 | 5.5       |
| 936531     | AD2-068 C    | 2.29      |
| 936701     | AD2-089 C    | 3.09      |
| 937481     | AD2-202 C O1 | 0.92      |
| 939181     | AE1-148 C O1 | 3.72      |
| 940081     | AE1-250 C    | 14.48     |
| 940521     | AE2-037 C O2 | 2.85      |
| 940571     | AE2-044 C    | 2.02      |
| 940661     | AE2-053      | 1.39      |
| 941951     | AE2-207      | 1.31      |
| 942451     | AE2-258      | 0.9       |
| 942711     | AE2-287 C O2 | 4.54      |
| AA2-074    | AA2-074      | 3.78      |
| BLUEG      | BLUEG        | 5.89      |
| CANNELTON  | CANNELTON    | 0.24      |
| CBM-N      | CBM-N        | 0.09      |
| CBM-S1     | CBM-S1       | 1.2       |
| CBM-S2     | CBM-S2       | 10.29     |
| CBM-W2     | CBM-W2       | 2.85      |
| COFFEEN    | COFFEEN      | 0.37      |
| CPL        | CPL          | 5.55      |
| DUCKCREEK  | DUCKCREEK    | 0.95      |
| EDWARDS    | EDWARDS      | 0.46      |
| ELMERSMITH | ELMERSMITH   | 0.38      |
| FARMERCITY | FARMERCITY   | 0.13      |
| G-007A     | G-007A       | 0.68      |
| GIBSON     | GIBSON       | 0.2       |
| NEWTON     | NEWTON       | 1.04      |
| NYISO      | NYISO        | 0.38      |
| PRAIRIE    | PRAIRIE      | 0.91      |
| SMITHLAND  | SMITHLAND    | 0.0       |
| TATANKA    | TATANKA      | 0.36      |
| TILTON     | TILTON       | 0.63      |
| TRIMBLE    | TRIMBLE      | 0.67      |
| VFT        | VFT          | 1.78      |

#### 14.5.15 Index 15

| ID      | FROM BUS# | FROM BUS  | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-----------|---------------|---------|--------------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090455 | 313845    | 6HATHAWAY | DVP           | 304222  | 6ROCKYMT230T | CPL         | 1      | DVP_P1-2: LN 2181 | single | 374.0      | 147.83                | 149.49                 | DC    | 6.22      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.13      |
| 315115 | 1S HAMPT1    | 0.54      |
| 315126 | 1ROARAP2     | 0.81      |
| 315128 | 1ROARAP4     | 0.78      |
| 315131 | 1EDGECEMA    | 24.75     |
| 315132 | 1EDGECEMB    | 24.75     |
| 315136 | 1ROSEMG1     | 2.1       |
| 315137 | 1ROSEMS1     | 1.3       |
| 315138 | 1ROSEMG2     | 0.98      |
| 315139 | 1GASTONA     | 2.52      |
| 315141 | 1GASTONB     | 2.52      |
| 315292 | 1DOMTR78     | 0.58      |
| 315293 | 1DOMTR9      | 0.48      |
| 315294 | 1DOMTR10     | 0.86      |
| 901081 | W1-029 C     | 0.25      |
| 916041 | Z1-036 C     | 0.29      |
| 917331 | Z2-043 C     | 0.23      |
| 917341 | Z2-044 C     | 0.2       |
| 917511 | Z2-088 C OP1 | 1.46      |
| 918491 | AA1-063AC OP | 0.79      |
| 918511 | AA1-065 C OP | 0.72      |
| 918531 | AA1-067 C    | 0.15      |
| 918561 | AA1-072 C    | 0.03      |
| 919691 | AA2-053 C    | 0.83      |
| 919701 | AA2-057 C    | 8.14      |
| 920041 | AA2-088 C OP | 0.46      |
| 920591 | AA2-165 C    | 0.14      |
| 920671 | AA2-174 C    | 0.04      |
| 920691 | AA2-178 C    | 0.54      |
| 923801 | AB2-015 C O1 | 3.95      |
| 923851 | AB2-025 C    | 0.12      |
| 923911 | AB2-031 C O1 | 1.61      |
| 923991 | AB2-040 C O1 | 0.64      |
| 924151 | AB2-059 C O1 | 2.06      |
| 924401 | AB2-089 C    | 0.73      |
| 924491 | AB2-098 C    | 0.41      |
| 924501 | AB2-099 C    | 0.4       |
| 924511 | AB2-100 C    | 8.39      |
| 925121 | AB2-169 C    | 0.49      |
| 925171 | AB2-174 C O1 | 4.93      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925591     | AC1-034 C    | 10.93     |
| 925781     | AC1-054 C O1 | 2.83      |
| 926071     | AC1-086 C    | 23.24     |
| 926201     | AC1-098 C    | 5.92      |
| 926211     | AC1-099 C    | 1.98      |
| 927021     | AC1-189 C    | 9.72      |
| 927141     | AC1-208 C    | 9.06      |
| 930401     | AB1-081 C O1 | 1.74      |
| 930861     | AB1-132 C O1 | 1.92      |
| 931231     | AB1-173 C    | 0.2       |
| 931241     | AB1-173AC    | 0.2       |
| 932631     | AC2-084 C    | 8.44      |
| 933991     | AD1-023 C    | 7.4       |
| 934201     | AD1-047 C    | 5.77      |
| 934231     | AD1-050 C    | 1.6       |
| 934331     | AD1-057 C O1 | 19.81     |
| 934521     | AD1-076 C    | 28.78     |
| 936401     | AD2-051 C O1 | 6.14      |
| 936701     | AD2-089 C    | 14.05     |
| 936711     | AD2-090 C O1 | 3.69      |
| 937571     | AD2-169 C    | 7.4       |
| 938171     | AE1-026 C1 O | 16.32     |
| 938172     | AE1-026 C2 O | 2.36      |
| 938221     | AE1-035 C    | 1.48      |
| 938661     | AE1-088      | 2.05      |
| 938771     | AE1-103 C O1 | 1.56      |
| 939071     | AE1-135 C O1 | 14.1      |
| 940481     | AE2-033 C    | 7.06      |
| 940491     | AE2-034 C    | 3.88      |
| 940521     | AE2-037 C O2 | 5.46      |
| 940571     | AE2-044 C    | 7.16      |
| 941501     | AE2-147 C    | 4.64      |
| 941541     | AE2-151 C    | 0.76      |
| 941951     | AE2-207      | 4.63      |
| 942371     | AE2-250 C O2 | 5.95      |
| 942471     | AE2-260 C O2 | 9.81      |
| 942711     | AE2-287 C O2 | 6.22      |
| 942851     | AE2-304 C    | 0.2       |
| 943171     | AE2-346 C    | 1.2       |
| BLUEG      | BLUEG        | 5.91      |
| CALDERWOOD | CALDERWOOD   | 1.2       |
| CANNELTON  | CANNELTON    | 0.4       |
| CATAWBA    | CATAWBA      | 1.17      |
| CBM-N      | CBM-N        | 0.12      |
| CHEOAH     | CHEOAH       | 1.12      |
| CHILHOWEE  | CHILHOWEE    | 0.39      |
| COFFEEN    | COFFEEN      | 0.69      |
| COTTONWOOD | COTTONWOOD   | 4.01      |
| DUCKCREEK  | DUCKCREEK    | 1.41      |
| EDWARDS    | EDWARDS      | 0.63      |
| ELMERSMITH | ELMERSMITH   | 0.71      |
| FARMERCITY | FARMERCITY   | 0.49      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007A</b>     | G-007A     | 0.65             |
| <b>GIBSON</b>     | GIBSON     | 0.25             |
| <b>HAMLET</b>     | HAMLET     | 2.3              |
| <b>NEWTON</b>     | NEWTON     | 1.79             |
| <b>NYISO</b>      | NYISO      | 0.54             |
| <b>PRAIRIE</b>    | PRAIRIE    | 3.73             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.33             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.33             |
| <b>TATANKA</b>    | TATANKA    | 0.84             |
| <b>TILTON</b>     | TILTON     | 0.75             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.65             |
| <b>TVA</b>        | TVA        | 3.37             |
| <b>UNIONPOWER</b> | UNIONPOWER | 1.66             |
| <b>VFT</b>        | VFT        | 1.72             |

#### 14.5.16 Index 16

| ID      | FROM BUS# | FROM BUS  | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-----------|---------------|---------|--------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090698 | 313845    | 6HATHAWAY | DVP           | 314591  | 6NASH  | DVP         | 1      | DVP_P1-2: LN 2058 | single | 449.32     | 132.2                 | 133.61                 | DC    | 6.34      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.13      |
| 315115 | 1S HAMPT1    | 0.55      |
| 315126 | 1ROARAP2     | 0.82      |
| 315128 | 1ROARAP4     | 0.79      |
| 315131 | 1EDGECEMA    | 25.25     |
| 315132 | 1EDGECEMB    | 25.25     |
| 315136 | 1ROSEMG1     | 2.14      |
| 315137 | 1ROSEMS1     | 1.33      |
| 315138 | 1ROSEMG2     | 1.0       |
| 315139 | 1GASTONA     | 2.57      |
| 315141 | 1GASTONB     | 2.57      |
| 315292 | 1DOMTR78     | 0.6       |
| 315293 | 1DOMTR9      | 0.49      |
| 315294 | 1DOMTR10     | 0.88      |
| 901081 | W1-029 C     | 0.25      |
| 916041 | Z1-036 C     | 0.3       |
| 917331 | Z2-043 C     | 0.23      |
| 917341 | Z2-044 C     | 0.21      |
| 917511 | Z2-088 C OP1 | 1.49      |
| 918491 | AA1-063AC OP | 0.8       |
| 918511 | AA1-065 C OP | 0.74      |
| 918531 | AA1-067 C    | 0.15      |
| 918561 | AA1-072 C    | 0.03      |
| 919691 | AA2-053 C    | 0.84      |
| 919701 | AA2-057 C    | 8.3       |
| 920041 | AA2-088 C OP | 0.47      |
| 920591 | AA2-165 C    | 0.14      |
| 920671 | AA2-174 C    | 0.04      |
| 920691 | AA2-178 C    | 0.55      |
| 923801 | AB2-015 C O1 | 4.03      |
| 923851 | AB2-025 C    | 0.12      |
| 923911 | AB2-031 C O1 | 1.64      |
| 923991 | AB2-040 C O1 | 0.66      |
| 924151 | AB2-059 C O1 | 2.1       |
| 924401 | AB2-089 C    | 0.74      |
| 924491 | AB2-098 C    | 0.41      |
| 924501 | AB2-099 C    | 0.41      |
| 924511 | AB2-100 C    | 8.56      |
| 925121 | AB2-169 C    | 0.5       |
| 925171 | AB2-174 C O1 | 5.03      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925591     | AC1-034 C    | 11.15     |
| 925781     | AC1-054 C O1 | 2.89      |
| 926071     | AC1-086 C    | 23.71     |
| 926201     | AC1-098 C    | 6.04      |
| 926211     | AC1-099 C    | 2.02      |
| 927021     | AC1-189 C    | 9.92      |
| 927141     | AC1-208 C    | 9.24      |
| 930401     | AB1-081 C O1 | 1.78      |
| 930861     | AB1-132 C O1 | 1.96      |
| 931231     | AB1-173 C    | 0.2       |
| 931241     | AB1-173AC    | 0.2       |
| 932631     | AC2-084 C    | 8.61      |
| 933991     | AD1-023 C    | 7.55      |
| 934201     | AD1-047 C    | 5.89      |
| 934231     | AD1-050 C    | 1.64      |
| 934331     | AD1-057 C O1 | 20.2      |
| 934521     | AD1-076 C    | 29.35     |
| 936401     | AD2-051 C O1 | 6.26      |
| 936701     | AD2-089 C    | 14.33     |
| 936711     | AD2-090 C O1 | 3.77      |
| 937571     | AD2-169 C    | 7.54      |
| 938171     | AE1-026 C1 O | 16.65     |
| 938172     | AE1-026 C2 O | 2.41      |
| 938221     | AE1-035 C    | 1.51      |
| 938661     | AE1-088      | 2.09      |
| 938771     | AE1-103 C O1 | 1.59      |
| 939071     | AE1-135 C O1 | 14.38     |
| 940481     | AE2-033 C    | 7.2       |
| 940491     | AE2-034 C    | 3.96      |
| 940521     | AE2-037 C O2 | 5.57      |
| 940571     | AE2-044 C    | 7.3       |
| 941501     | AE2-147 C    | 4.73      |
| 941541     | AE2-151 C    | 0.78      |
| 941951     | AE2-207      | 4.72      |
| 942371     | AE2-250 C O2 | 6.07      |
| 942471     | AE2-260 C O2 | 10.01     |
| 942711     | AE2-287 C O2 | 6.34      |
| 942851     | AE2-304 C    | 0.21      |
| 943171     | AE2-346 C    | 1.23      |
| BLUEG      | BLUEG        | 6.03      |
| CALDERWOOD | CALDERWOOD   | 1.22      |
| CANNELTON  | CANNELTON    | 0.41      |
| CATAWBA    | CATAWBA      | 1.19      |
| CBM-N      | CBM-N        | 0.13      |
| CHEOAH     | CHEOAH       | 1.14      |
| CHILHOWEE  | CHILHOWEE    | 0.4       |
| COFFEEN    | COFFEEN      | 0.7       |
| COTTONWOOD | COTTONWOOD   | 4.09      |
| DUCKCREEK  | DUCKCREEK    | 1.44      |
| EDWARDS    | EDWARDS      | 0.64      |
| ELMERSMITH | ELMERSMITH   | 0.72      |
| FARMERCITY | FARMERCITY   | 0.5       |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007A</b>     | G-007A     | 0.66             |
| <b>GIBSON</b>     | GIBSON     | 0.26             |
| <b>HAMLET</b>     | HAMLET     | 2.34             |
| <b>NEWTON</b>     | NEWTON     | 1.82             |
| <b>NYISO</b>      | NYISO      | 0.55             |
| <b>PRAIRIE</b>    | PRAIRIE    | 3.81             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.34             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.34             |
| <b>TATANKA</b>    | TATANKA    | 0.86             |
| <b>TILTON</b>     | TILTON     | 0.76             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.66             |
| <b>TVA</b>        | TVA        | 3.43             |
| <b>UNIONPOWER</b> | UNIONPOWER | 1.7              |
| <b>VFT</b>        | VFT        | 1.75             |

## 14.5.17 Index 17

| ID      | FROM BUS# | FROM BUS   | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|------------|---------------|---------|----------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090807 | 313867    | 6BREMODIST | DVP           | 314765  | 6MTEAGLE | DVP         | 1      | DVP_P1-2: LN 556 | single | 661.76     | 105.72                | 106.74                 | DC    | 6.74      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.37      |
| 314704 | 3LAWRENC     | 0.12      |
| 315126 | 1ROARAP2     | 0.33      |
| 315150 | 1BUGGS 1     | 7.72      |
| 315151 | 1BUGGS 2     | 7.72      |
| 315153 | 1CLOVER1     | 8.63      |
| 315154 | 1CLOVER2     | 8.52      |
| 315158 | 1KERR 1      | 0.15      |
| 315159 | 1KERR 2      | 0.63      |
| 315160 | 1KERR 3      | 0.62      |
| 315161 | 1KERR 4      | 0.62      |
| 315162 | 1KERR 5      | 0.62      |
| 315163 | 1KERR 6      | 0.62      |
| 315164 | 1KERR 7      | 0.62      |
| 315170 | 1BREMO 3     | 21.85     |
| 315171 | 1BREMO 4     | 48.01     |
| 315191 | 1BEARGRDN G1 | 7.96      |
| 315192 | 1BEARGRDN G2 | 7.96      |
| 315193 | 1BEARGRDN S1 | 16.37     |
| 315266 | 1PLYWOOD A   | 0.61      |
| 920291 | AA2-127      | 1.65      |
| 923861 | AB2-026 C    | 0.36      |
| 923911 | AB2-031 C O1 | 0.76      |
| 923991 | AB2-040 C O1 | 0.3       |
| 924021 | AB2-043 C O1 | 0.3       |
| 924031 | AB2-045 C    | 0.59      |
| 924161 | AB2-060 C O1 | 0.88      |
| 924301 | AB2-077 C O1 | 0.19      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924401 | AB2-089 C    | 1.19      |
| 925171 | AB2-174 C O1 | 2.39      |
| 925611 | AC1-036 C    | 0.12      |
| 925781 | AC1-054 C O1 | 3.84      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 3.05      |
| 926021 | AC1-080 C    | 1.02      |
| 926271 | AC1-105 C O1 | 3.87      |
| 927251 | AC1-221 C    | 1.01      |
| 927261 | AC1-222 C    | 2.36      |
| 931231 | AB1-173 C    | 0.09      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.09      |
| 932511     | AC2-071 C    | 0.58      |
| 932761     | AC2-100 C    | 2.33      |
| 933501     | AC2-165 C    | 14.27     |
| 934201     | AD1-047 C    | 2.71      |
| 934231     | AD1-050 C    | 2.63      |
| 934311     | AD1-055 C    | 1.64      |
| 934341     | AD1-058 C    | 2.53      |
| 934611     | AD1-087 C O1 | 6.64      |
| 934621     | AD1-088 C    | 15.85     |
| 934991     | AD1-131 C    | 0.83      |
| 935171     | AD1-152 C O1 | 6.6       |
| 935221     | AD1-157 C    | 0.25      |
| 935231     | AD1-160 C    | 1.51      |
| 936261     | AD2-033 C    | 13.05     |
| 936331     | AD2-043 C    | 3.06      |
| 936361     | AD2-046 C O1 | 5.59      |
| 936481     | AD2-063 C O1 | 13.31     |
| 937481     | AD2-202 C O1 | 1.83      |
| 937571     | AD2-169 C    | 3.35      |
| 938371     | AE1-056 C    | 8.89      |
| 938551     | AE1-074 C    | 0.78      |
| 938561     | AE1-075 C    | 2.6       |
| 938821     | AE1-108 C O1 | 27.5      |
| 939181     | AE1-148 C O1 | 5.6       |
| 939371     | AE1-168 C    | 18.15     |
| 939841     | AE1-220 C O1 | 8.76      |
| 940241     | AE2-006      | 0.51      |
| 940661     | AE2-053      | 2.08      |
| 941011     | AE2-092 C    | 16.65     |
| 941791     | AE2-182 C    | 2.87      |
| 942371     | AE2-250 C O2 | 3.13      |
| 942451     | AE2-258      | 1.84      |
| 942461     | AE2-259 C O2 | 15.98     |
| 942711     | AE2-287 C O2 | 6.74      |
| 942751     | AE2-291 C O2 | 4.14      |
| 942761     | AE2-292 C O2 | 5.51      |
| 943051     | AE2-328 C    | 17.8      |
| AA2-074    | AA2-074      | 1.72      |
| CARR       | CARR         | 0.26      |
| CBM-S1     | CBM-S1       | 2.58      |
| CBM-S2     | CBM-S2       | 4.56      |
| CBM-W1     | CBM-W1       | 0.87      |
| CBM-W2     | CBM-W2       | 15.09     |
| CIN        | CIN          | 0.48      |
| CPL        | CPL          | 2.53      |
| IPL        | IPL          | 0.27      |
| LGEE       | LGEE         | 0.14      |
| MEC        | MEC          | 1.66      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.12      |

## 14.5.18 Index 18

| ID      | FROM BUS# | FROM BUS     | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|--------------|---------------|---------|----------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720531 | 314266    | 6NORTHAMPTON | DVP           | 314569  | 6EARLEYS | DVP         | 1      | DVP_P4-2:<br>238T2002 | breaker | 658.0      | 111.49                | 113.19                 | DC    | 24.84     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.44      |
| 314572 | 3EMPORIA     | 0.62      |
| 314578 | 3HORNRTN     | 3.69      |
| 314623 | 3WITAKRS     | 0.77      |
| 314704 | 3LAWRENC     | 0.3       |
| 315126 | 1ROARAP2     | 1.21      |
| 315131 | 1EDGECEMA    | 5.62      |
| 315132 | 1EDGECEMB    | 5.62      |
| 315136 | 1ROSEMG1     | 3.06      |
| 315137 | 1ROSEMS1     | 1.9       |
| 315138 | 1ROSEMG2     | 1.43      |
| 315139 | 1GASTONA     | 4.69      |
| 315141 | 1GASTONB     | 4.69      |
| 315150 | 1BUGGS 1     | 5.52      |
| 315151 | 1BUGGS 2     | 5.52      |
| 917342 | Z2-044 E     | 0.33      |
| 918492 | AA1-063AE OP | 2.18      |
| 919692 | AA2-053 E    | 3.13      |
| 919701 | AA2-057 C    | 4.15      |
| 919702 | AA2-057 E    | 2.08      |
| 920592 | AA2-165 E    | 0.27      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 3.1       |
| 923912 | AB2-031 E O1 | 1.53      |
| 923991 | AB2-040 C O1 | 1.24      |
| 923992 | AB2-040 E O1 | 8.34      |
| 924022 | AB2-043 E O1 | 2.74      |
| 924152 | AB2-059 E O1 | 3.09      |
| 924162 | AB2-060 E O1 | 2.23      |
| 924302 | AB2-077 E O1 | 0.7       |
| 924312 | AB2-078 E O1 | 0.7       |
| 924322 | AB2-079 E O1 | 0.7       |
| 924401 | AB2-089 C    | 1.54      |
| 924402 | AB2-089 E    | 0.79      |
| 924511 | AB2-100 C    | 21.43     |
| 924512 | AB2-100 E    | 10.55     |
| 925171 | AB2-174 C O1 | 10.03     |
| 925172 | AB2-174 E O1 | 9.07      |
| 925591 | AC1-034 C    | 3.88      |
| 925592 | AC1-034 E    | 2.93      |
| 925612 | AC1-036 E    | 0.36      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 925781 | AC1-054 C O1 | 5.58      |
| 925782 | AC1-054 E O1 | 2.57      |
| 926071 | AC1-086 C    | 43.25     |
| 926072 | AC1-086 E    | 19.69     |
| 927141 | AC1-208 C    | 6.05      |
| 927142 | AC1-208 E    | 2.68      |
| 930402 | AB1-081 E O1 | 2.18      |
| 930861 | AB1-132 C O1 | 3.58      |
| 930862 | AB1-132 E O1 | 12.59     |
| 931231 | AB1-173 C    | 0.38      |
| 931232 | AB1-173 E    | 1.46      |
| 931241 | AB1-173AC    | 0.38      |
| 931242 | AB1-173AE    | 1.46      |
| 934201 | AD1-047 C    | 11.12     |
| 934202 | AD1-047 E    | 7.42      |
| 934231 | AD1-050 C    | 3.39      |
| 934232 | AD1-050 E    | 1.85      |
| 934331 | AD1-057 C O1 | 12.72     |
| 934332 | AD1-057 E O1 | 6.78      |
| 936261 | AD2-033 C    | 5.68      |
| 936262 | AD2-033 E    | 3.79      |
| 936361 | AD2-046 C O1 | 5.42      |
| 936362 | AD2-046 E O1 | 2.49      |
| 936481 | AD2-063 C O1 | 7.29      |
| 936482 | AD2-063 E O1 | 4.86      |
| 937571 | AD2-169 C    | 13.44     |
| 937572 | AD2-169 E    | 8.96      |
| 938174 | AE1-026 CBAT | 1.52      |
| 938175 | AE1-026 EBAT | 6.09      |
| 938661 | AE1-088      | 0.92      |
| 939071 | AE1-135 C O1 | 37.93     |
| 939072 | AE1-135 E O1 | 25.29     |
| 939181 | AE1-148 C O1 | 5.3       |
| 939182 | AE1-148 E O1 | 3.54      |
| 940241 | AE2-006      | 0.2       |
| 940481 | AE2-033 C    | 28.13     |
| 940482 | AE2-033 E    | 18.97     |
| 940571 | AE2-044 C    | 2.54      |
| 940572 | AE2-044 E    | 1.09      |
| 940661 | AE2-053      | 1.98      |
| 941951 | AE2-207      | 1.64      |
| 942371 | AE2-250 C O2 | 13.89     |
| 942372 | AE2-250 E O2 | 7.33      |
| 942451 | AE2-258      | 1.25      |
| 942471 | AE2-260 C O2 | 26.19     |
| 942472 | AE2-260 E O2 | 37.15     |
| 942711 | AE2-287 C O2 | 14.9      |
| 942712 | AE2-287 E O2 | 9.93      |
| CARR   | CARR         | 0.09      |
| CBM-S1 | CBM-S1       | 1.67      |
| CBM-S2 | CBM-S2       | 1.86      |
| CBM-W1 | CBM-W1       | 1.67      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>CBM-W2</b>     | CBM-W2     | 10.82            |
| <b>CIN</b>        | CIN        | 0.76             |
| <b>CPLE</b>       | CPLE       | 0.93             |
| <b>G-007</b>      | G-007      | 0.31             |
| <b>IPL</b>        | IPL        | 0.48             |
| <b>LGEE</b>       | LGEE       | 0.22             |
| <b>MEC</b>        | MEC        | 1.69             |
| <b>MECS</b>       | MECS       | 0.7              |
| <b>O-066</b>      | O-066      | 1.97             |
| <b>RENSSELAER</b> | RENSSELAER | 0.07             |
| <b>WEC</b>        | WEC        | 0.2              |

#### 14.5.19 Index 19

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME            | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720611 | 314282    | 6CARSON  | DVP           | 314331  | 6POE   | DVP         | 1      | DVP_P4-2:<br>24972-4 | breaker | 830.0      | 112.77                | 116.43                 | DC    | 30.32     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314554 | 3BTLEBRO     | 0.61      |
| 314557 | 3BETHELC     | 0.58      |
| 314572 | 3EMPORIA     | 0.75      |
| 314574 | 6EVERETS     | 2.53      |
| 314578 | 3HORNRTN     | 3.68      |
| 314582 | 3KELFORD     | 2.67      |
| 314603 | 3SCOT NK     | 2.69      |
| 314617 | 3TUNIS       | 0.58      |
| 314620 | 6CASHIE      | 0.44      |
| 314623 | 3WITAKRS     | 1.08      |
| 314704 | 3LAWRENC     | 0.37      |
| 315126 | 1ROARAP2     | 1.15      |
| 315131 | 1EDGECEMA    | 7.24      |
| 315132 | 1EDGECEMB    | 7.24      |
| 315136 | 1ROSEMG1     | 2.19      |
| 315137 | 1ROSEMS1     | 1.36      |
| 315138 | 1ROSEMG2     | 1.03      |
| 315139 | 1GASTONA     | 3.26      |
| 315141 | 1GASTONB     | 3.26      |
| 315150 | 1BUGGS 1     | 6.46      |
| 315151 | 1BUGGS 2     | 6.46      |
| 900672 | V4-068 E     | 0.2       |
| 917332 | Z2-043 E     | 0.76      |
| 917342 | Z2-044 E     | 0.46      |
| 917512 | Z2-088 E OP1 | 2.58      |
| 918492 | AA1-063AE OP | 3.88      |
| 918512 | AA1-065 E OP | 2.79      |
| 918532 | AA1-067 E    | 0.45      |
| 918562 | AA1-072 E    | 0.13      |
| 919692 | AA2-053 E    | 3.92      |
| 919701 | AA2-057 C    | 5.95      |
| 919702 | AA2-057 E    | 2.98      |
| 920042 | AA2-088 E OP | 6.76      |
| 920592 | AA2-165 E    | 0.39      |
| 920672 | AA2-174 E    | 0.45      |
| 923851 | AB2-025 C    | 0.94      |
| 923852 | AB2-025 E    | 3.48      |
| 923911 | AB2-031 C O1 | 3.5       |
| 923912 | AB2-031 E O1 | 1.72      |
| 923991 | AB2-040 C O1 | 1.4       |
| 923992 | AB2-040 E O1 | 9.39      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 924022 | AB2-043 E O1 | 3.24      |
| 924152 | AB2-059 E O1 | 4.16      |
| 924162 | AB2-060 E O1 | 2.64      |
| 924302 | AB2-077 E O1 | 0.83      |
| 924312 | AB2-078 E O1 | 0.83      |
| 924322 | AB2-079 E O1 | 0.83      |
| 924401 | AB2-089 C    | 1.64      |
| 924402 | AB2-089 E    | 0.85      |
| 924491 | AB2-098 C    | 0.35      |
| 924492 | AB2-098 E    | 0.15      |
| 924501 | AB2-099 C    | 0.41      |
| 924502 | AB2-099 E    | 0.18      |
| 924511 | AB2-100 C    | 26.3      |
| 924512 | AB2-100 E    | 12.96     |
| 925122 | AB2-169 E    | 3.03      |
| 925171 | AB2-174 C O1 | 11.6      |
| 925172 | AB2-174 E O1 | 10.49     |
| 925591 | AC1-034 C    | 5.23      |
| 925592 | AC1-034 E    | 3.95      |
| 925781 | AC1-054 C O1 | 5.85      |
| 925782 | AC1-054 E O1 | 2.7       |
| 926071 | AC1-086 C    | 30.05     |
| 926072 | AC1-086 E    | 13.68     |
| 926201 | AC1-098 C    | 5.25      |
| 926202 | AC1-098 E    | 3.13      |
| 926211 | AC1-099 C    | 1.76      |
| 926212 | AC1-099 E    | 1.03      |
| 927021 | AC1-189 C    | 5.59      |
| 927022 | AC1-189 E    | 2.79      |
| 927141 | AC1-208 C    | 8.29      |
| 927142 | AC1-208 E    | 3.68      |
| 930402 | AB1-081 E O1 | 2.94      |
| 930861 | AB1-132 C O1 | 2.49      |
| 930862 | AB1-132 E O1 | 8.74      |
| 931231 | AB1-173 C    | 0.43      |
| 931232 | AB1-173 E    | 1.64      |
| 931241 | AB1-173AC    | 0.43      |
| 931242 | AB1-173AE    | 1.64      |
| 932631 | AC2-084 C    | 7.48      |
| 932632 | AC2-084 E    | 3.69      |
| 934201 | AD1-047 C    | 12.53     |
| 934202 | AD1-047 E    | 8.35      |
| 934231 | AD1-050 C    | 3.62      |
| 934232 | AD1-050 E    | 1.98      |
| 934331 | AD1-057 C O1 | 10.81     |
| 934332 | AD1-057 E O1 | 5.77      |
| 936261 | AD2-033 C    | 6.73      |
| 936262 | AD2-033 E    | 4.49      |
| 936361 | AD2-046 C O1 | 6.06      |
| 936362 | AD2-046 E O1 | 2.79      |
| 936401 | AD2-051 C O1 | 6.21      |
| 936402 | AD2-051 E O1 | 2.67      |

| Bus #   | Bus          | MW Impact |
|---------|--------------|-----------|
| 936481  | AD2-063 C O1 | 8.62      |
| 936482  | AD2-063 E O1 | 5.75      |
| 936701  | AD2-089 C    | 5.19      |
| 936702  | AD2-089 E    | 3.46      |
| 936711  | AD2-090 C O1 | 3.71      |
| 936712  | AD2-090 E O1 | 2.47      |
| 937571  | AD2-169 C    | 14.66     |
| 937572  | AD2-169 E    | 9.78      |
| 938171  | AE1-026 C1 O | 14.49     |
| 938172  | AE1-026 C2 O | 2.1       |
| 938173  | AE1-026 E O1 | 4.38      |
| 938221  | AE1-035 C    | 1.41      |
| 938222  | AE1-035 E    | 0.7       |
| 938661  | AE1-088      | 0.92      |
| 939071  | AE1-135 C O1 | 49.36     |
| 939072  | AE1-135 E O1 | 32.9      |
| 939181  | AE1-148 C O1 | 5.96      |
| 939182  | AE1-148 E O1 | 3.97      |
| 940481  | AE2-033 C    | 48.0      |
| 940482  | AE2-033 E    | 32.36     |
| 940521  | AE2-037 C O2 | 4.94      |
| 940522  | AE2-037 E O2 | 2.39      |
| 940571  | AE2-044 C    | 3.43      |
| 940572  | AE2-044 E    | 1.47      |
| 940641  | AE2-051 C O2 | 60.02     |
| 940642  | AE2-051 E O2 | 40.02     |
| 940652  | AE2-052 BAT  | 1.4       |
| 940661  | AE2-053      | 2.22      |
| 941532  | AE2-150 EBAT | 2.43      |
| 941541  | AE2-151 C    | 0.77      |
| 941542  | AE2-151 E    | 0.41      |
| 941951  | AE2-207      | 2.22      |
| 942371  | AE2-250 C O2 | 17.08     |
| 942372  | AE2-250 E O2 | 9.01      |
| 942451  | AE2-258      | 1.47      |
| 942471  | AE2-260 C O2 | 33.78     |
| 942472  | AE2-260 E O2 | 47.92     |
| 942711  | AE2-287 C O2 | 18.19     |
| 942712  | AE2-287 E O2 | 12.13     |
| 943171  | AE2-346 C    | 1.24      |
| 943172  | AE2-346 E    | 0.53      |
| AA2-074 | AA2-074      | 1.9       |
| CARR    | CARR         | 0.18      |
| CBM-S1  | CBM-S1       | 4.45      |
| CBM-S2  | CBM-S2       | 5.15      |
| CBM-W1  | CBM-W1       | 4.55      |
| CBM-W2  | CBM-W2       | 29.12     |
| CIN     | CIN          | 2.05      |
| CPL     | CPL          | 2.8       |
| G-007   | G-007        | 0.61      |
| IPL     | IPL          | 1.29      |
| LGEE    | LGEE         | 0.59      |

| Bus #      | Bus        | MW Impact |
|------------|------------|-----------|
| MEC        | MEC        | 4.54      |
| MECS       | MECS       | 1.95      |
| O-066      | O-066      | 3.89      |
| RENSSELAER | RENSSELAER | 0.14      |
| WEC        | WEC        | 0.55      |

## 14.5.20 Index 20

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090926 | 314282    | 6CARSON  | DVP           | 314285  | 6CHRL249 | DVP         | 1      | DVP_P1-2: LN 563 | single | 559.3      | 125.0                 | 126.21                 | DC    | 8.07      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.03      |
| 314704 | 3LAWRENC     | 0.16      |
| 315102 | 1BRUNSWICKG1 | 2.54      |
| 315103 | 1BRUNSWICKG2 | 2.54      |
| 315104 | 1BRUNSWICKG3 | 2.54      |
| 315105 | 1BRUNSWICKS1 | 5.29      |
| 315126 | 1ROARAP2     | 0.56      |
| 315128 | 1ROARAP4     | 0.54      |
| 315131 | 1EDGECEMA    | 4.32      |
| 315132 | 1EDGECEMB    | 4.32      |
| 315136 | 1ROSEMG1     | 0.99      |
| 315137 | 1ROSEMS1     | 0.62      |
| 315138 | 1ROSEMG2     | 0.47      |
| 315139 | 1GASTONA     | 1.44      |
| 315141 | 1GASTONB     | 1.44      |
| 315150 | 1BUGGS 1     | 4.46      |
| 315151 | 1BUGGS 2     | 4.46      |
| 315158 | 1KERR 1      | 0.11      |
| 315159 | 1KERR 2      | 0.45      |
| 315160 | 1KERR 3      | 0.44      |
| 315161 | 1KERR 4      | 0.44      |
| 315162 | 1KERR 5      | 0.44      |
| 315163 | 1KERR 6      | 0.44      |
| 315164 | 1KERR 7      | 0.44      |
| 916301 | Z1-086 C     | 15.49     |
| 917331 | Z2-043 C     | 0.13      |
| 917341 | Z2-044 C     | 0.08      |
| 917511 | Z2-088 C OP1 | 0.47      |
| 918491 | AA1-063AC OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 0.56      |
| 919701 | AA2-057 C    | 3.39      |
| 920041 | AA2-088 C OP | 0.32      |
| 920591 | AA2-165 C    | 0.06      |
| 920671 | AA2-174 C    | 0.03      |
| 923851 | AB2-025 C    | 0.33      |
| 923911 | AB2-031 C O1 | 1.5       |
| 923991 | AB2-040 C O1 | 0.6       |
| 924151 | AB2-059 C O1 | 0.59      |
| 924401 | AB2-089 C    | 0.96      |
| 924491 | AB2-098 C    | 0.23      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 924501 | AB2-099 C    | 0.25      |
| 924511 | AB2-100 C    | 10.06     |
| 925171 | AB2-174 C O1 | 4.9       |
| 925591 | AC1-034 C    | 3.16      |
| 925781 | AC1-054 C O1 | 3.33      |
| 926071 | AC1-086 C    | 13.29     |
| 926201 | AC1-098 C    | 2.93      |
| 926211 | AC1-099 C    | 0.98      |
| 927021 | AC1-189 C    | 3.64      |
| 927141 | AC1-208 C    | 4.48      |
| 930401 | AB1-081 C O1 | 0.5       |
| 930861 | AB1-132 C O1 | 1.1       |
| 931231 | AB1-173 C    | 0.18      |
| 931241 | AB1-173AC    | 0.18      |
| 932631 | AC2-084 C    | 4.18      |
| 933991 | AD1-023 C    | 4.74      |
| 934201 | AD1-047 C    | 5.39      |
| 934231 | AD1-050 C    | 2.12      |
| 934331 | AD1-057 C O1 | 5.45      |
| 934521 | AD1-076 C    | 18.8      |
| 934611 | AD1-087 C O1 | 2.89      |
| 935171 | AD1-152 C O1 | 2.87      |
| 935211 | AD1-156 C    | 0.11      |
| 936361 | AD2-046 C O1 | 3.75      |
| 936401 | AD2-051 C O1 | 3.75      |
| 936481 | AD2-063 C O1 | 5.54      |
| 936531 | AD2-068 C    | 2.08      |
| 936701 | AD2-089 C    | 3.22      |
| 936711 | AD2-090 C O1 | 2.62      |
| 937481 | AD2-202 C O1 | 0.79      |
| 937571 | AD2-169 C    | 6.45      |
| 938171 | AE1-026 C1 O | 10.34     |
| 938172 | AE1-026 C2 O | 1.5       |
| 938221 | AE1-035 C    | 0.91      |
| 938491 | AE1-068 C O1 | 25.35     |
| 938501 | AE1-069 C O1 | 19.84     |
| 938661 | AE1-088      | 0.66      |
| 939071 | AE1-135 C O1 | 18.66     |
| 939181 | AE1-148 C O1 | 3.69      |
| 939411 | AE1-173 C    | 31.68     |
| 940471 | AE2-031 C O2 | 13.59     |
| 940481 | AE2-033 C    | 17.11     |
| 940521 | AE2-037 C O2 | 3.23      |
| 940571 | AE2-044 C    | 2.07      |
| 940641 | AE2-051 C O2 | 20.59     |
| 940661 | AE2-053      | 1.37      |
| 941031 | AE2-094 C    | 16.59     |
| 941541 | AE2-151 C    | 0.46      |
| 941951 | AE2-207      | 1.34      |
| 942211 | AE2-233 C    | 5.42      |
| 942371 | AE2-250 C O2 | 6.91      |
| 942451 | AE2-258      | 0.92      |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>942471</b>     | AE2-260 C O2 | 12.8             |
| <b>942711</b>     | AE2-287 C O2 | 8.07             |
| <b>942921</b>     | AE2-311 C O2 | 15.84            |
| <b>942931</b>     | AE2-313 C    | 14.91            |
| <b>943171</b>     | AE2-346 C    | 0.75             |
| <b>AA2-074</b>    | AA2-074      | 2.19             |
| <b>CARR</b>       | CARR         | 0.26             |
| <b>CBM-S1</b>     | CBM-S1       | 5.47             |
| <b>CBM-S2</b>     | CBM-S2       | 6.25             |
| <b>CBM-W1</b>     | CBM-W1       | 5.43             |
| <b>CBM-W2</b>     | CBM-W2       | 35.61            |
| <b>CIN</b>        | CIN          | 2.46             |
| <b>CPL</b>        | CPL          | 3.23             |
| <b>IPL</b>        | IPL          | 1.54             |
| <b>LGEE</b>       | LGEE         | 0.71             |
| <b>MEC</b>        | MEC          | 5.49             |
| <b>MECS</b>       | MECS         | 2.26             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.21             |
| <b>WEC</b>        | WEC          | 0.66             |

## 14.5.21 Index 21

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091007 | 314285    | 6CHRL249 | DVP           | 314316  | 6LOCKS | DVP         | 1      | DVP_P1-2: LN 563 | single | 559.3      | 121.33                | 122.54                 | DC    | 8.07      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.03      |
| 314704 | 3LAWRENC     | 0.16      |
| 315102 | 1BRUNSWICKG1 | 2.54      |
| 315103 | 1BRUNSWICKG2 | 2.54      |
| 315104 | 1BRUNSWICKG3 | 2.54      |
| 315105 | 1BRUNSWICKS1 | 5.29      |
| 315126 | 1ROARAP2     | 0.56      |
| 315128 | 1ROARAP4     | 0.54      |
| 315131 | 1EDGECEMA    | 4.32      |
| 315132 | 1EDGECEMB    | 4.32      |
| 315136 | 1ROSEMG1     | 0.99      |
| 315137 | 1ROSEMS1     | 0.62      |
| 315138 | 1ROSEMG2     | 0.47      |
| 315139 | 1GASTONA     | 1.44      |
| 315141 | 1GASTONB     | 1.44      |
| 315150 | 1BUGGS 1     | 4.46      |
| 315151 | 1BUGGS 2     | 4.46      |
| 315158 | 1KERR 1      | 0.11      |
| 315159 | 1KERR 2      | 0.45      |
| 315160 | 1KERR 3      | 0.44      |
| 315161 | 1KERR 4      | 0.44      |
| 315162 | 1KERR 5      | 0.44      |
| 315163 | 1KERR 6      | 0.44      |
| 315164 | 1KERR 7      | 0.44      |
| 916301 | Z1-086 C     | 15.49     |
| 917331 | Z2-043 C     | 0.13      |
| 917341 | Z2-044 C     | 0.08      |
| 917511 | Z2-088 C OP1 | 0.47      |
| 918491 | AA1-063AC OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 0.56      |
| 919701 | AA2-057 C    | 3.39      |
| 920041 | AA2-088 C OP | 0.32      |
| 920591 | AA2-165 C    | 0.06      |
| 920671 | AA2-174 C    | 0.03      |
| 923851 | AB2-025 C    | 0.33      |
| 923911 | AB2-031 C O1 | 1.5       |
| 923991 | AB2-040 C O1 | 0.6       |
| 924151 | AB2-059 C O1 | 0.59      |
| 924401 | AB2-089 C    | 0.96      |
| 924491 | AB2-098 C    | 0.23      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 924501 | AB2-099 C    | 0.25      |
| 924511 | AB2-100 C    | 10.06     |
| 925171 | AB2-174 C O1 | 4.9       |
| 925591 | AC1-034 C    | 3.16      |
| 925781 | AC1-054 C O1 | 3.33      |
| 926071 | AC1-086 C    | 13.29     |
| 926201 | AC1-098 C    | 2.93      |
| 926211 | AC1-099 C    | 0.98      |
| 927021 | AC1-189 C    | 3.64      |
| 927141 | AC1-208 C    | 4.48      |
| 930401 | AB1-081 C O1 | 0.5       |
| 930861 | AB1-132 C O1 | 1.1       |
| 931231 | AB1-173 C    | 0.18      |
| 931241 | AB1-173AC    | 0.18      |
| 932631 | AC2-084 C    | 4.18      |
| 933991 | AD1-023 C    | 4.74      |
| 934201 | AD1-047 C    | 5.39      |
| 934231 | AD1-050 C    | 2.12      |
| 934331 | AD1-057 C O1 | 5.45      |
| 934521 | AD1-076 C    | 18.8      |
| 934611 | AD1-087 C O1 | 2.89      |
| 935171 | AD1-152 C O1 | 2.87      |
| 935211 | AD1-156 C    | 0.11      |
| 936361 | AD2-046 C O1 | 3.75      |
| 936401 | AD2-051 C O1 | 3.75      |
| 936481 | AD2-063 C O1 | 5.54      |
| 936531 | AD2-068 C    | 2.08      |
| 936701 | AD2-089 C    | 3.22      |
| 936711 | AD2-090 C O1 | 2.62      |
| 937481 | AD2-202 C O1 | 0.79      |
| 937571 | AD2-169 C    | 6.45      |
| 938171 | AE1-026 C1 O | 10.34     |
| 938172 | AE1-026 C2 O | 1.5       |
| 938221 | AE1-035 C    | 0.91      |
| 938491 | AE1-068 C O1 | 25.35     |
| 938501 | AE1-069 C O1 | 19.84     |
| 938661 | AE1-088      | 0.66      |
| 939071 | AE1-135 C O1 | 18.66     |
| 939181 | AE1-148 C O1 | 3.69      |
| 939411 | AE1-173 C    | 31.68     |
| 940471 | AE2-031 C O2 | 13.59     |
| 940481 | AE2-033 C    | 17.11     |
| 940521 | AE2-037 C O2 | 3.23      |
| 940571 | AE2-044 C    | 2.07      |
| 940641 | AE2-051 C O2 | 20.59     |
| 940661 | AE2-053      | 1.37      |
| 941031 | AE2-094 C    | 16.59     |
| 941541 | AE2-151 C    | 0.46      |
| 941951 | AE2-207      | 1.34      |
| 942211 | AE2-233 C    | 5.42      |
| 942371 | AE2-250 C O2 | 6.91      |
| 942451 | AE2-258      | 0.92      |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>942471</b>     | AE2-260 C O2 | 12.8             |
| <b>942711</b>     | AE2-287 C O2 | 8.07             |
| <b>942921</b>     | AE2-311 C O2 | 15.84            |
| <b>942931</b>     | AE2-313 C    | 14.91            |
| <b>943171</b>     | AE2-346 C    | 0.75             |
| <b>AA2-074</b>    | AA2-074      | 2.19             |
| <b>CARR</b>       | CARR         | 0.26             |
| <b>CBM-S1</b>     | CBM-S1       | 5.47             |
| <b>CBM-S2</b>     | CBM-S2       | 6.25             |
| <b>CBM-W1</b>     | CBM-W1       | 5.43             |
| <b>CBM-W2</b>     | CBM-W2       | 35.61            |
| <b>CIN</b>        | CIN          | 2.46             |
| <b>CPL</b>        | CPL          | 3.23             |
| <b>IPL</b>        | IPL          | 1.54             |
| <b>LGEE</b>       | LGEE         | 0.71             |
| <b>MEC</b>        | MEC          | 5.49             |
| <b>MECS</b>       | MECS         | 2.26             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.21             |
| <b>WEC</b>        | WEC          | 0.66             |

## 14.5.22 Index 22

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS | TO BUS AREA | CKT ID | CONT NAME           | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------|-------------|--------|---------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720119 | 314287    | 6CHESTFB | DVP           | 314276  | 6BASIN | DVP         | 1      | DVP_P4-2:<br>H8T217 | breaker | 549.0      | 163.0                 | 163.74                 | DC    | 9.02      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314314 | 3LOCKS       | 0.17      |
| 314539 | 3UNCAMP      | 0.9       |
| 314541 | 3WATKINS     | 0.26      |
| 314572 | 3EMPORIA     | 0.22      |
| 314578 | 3HORNRTN     | 1.34      |
| 315065 | 1CHESTF6     | 27.21     |
| 315073 | 1STONECA     | 6.31      |
| 315074 | 1HOPCGN1     | 7.61      |
| 315075 | 1HOPCGN2     | 7.51      |
| 315076 | 1HOPPOLC     | 1.06      |
| 315077 | 1HOPHCF1     | 1.66      |
| 315078 | 1HOPHCF2     | 1.66      |
| 315079 | 1HOPHCF3     | 1.66      |
| 315080 | 1HOPHCF4     | 2.52      |
| 907092 | X1-038 E     | 2.26      |
| 918492 | AA1-063AE OP | 1.56      |
| 919692 | AA2-053 E    | 1.5       |
| 920042 | AA2-088 E OP | 4.03      |
| 920672 | AA2-174 E    | 0.17      |
| 923801 | AB2-015 C O1 | 3.23      |
| 923802 | AB2-015 E O1 | 2.65      |
| 923851 | AB2-025 C    | 0.22      |
| 923852 | AB2-025 E    | 0.83      |
| 923911 | AB2-031 C O1 | 1.07      |
| 923912 | AB2-031 E O1 | 0.53      |
| 923992 | AB2-040 E O1 | 2.87      |
| 924511 | AB2-100 C    | 6.94      |
| 924512 | AB2-100 E    | 3.42      |
| 924811 | AB2-134 C O1 | 1.04      |
| 924812 | AB2-134 E O1 | 8.11      |
| 925051 | AB2-160 C O1 | 4.45      |
| 925052 | AB2-160 E O1 | 7.26      |
| 925061 | AB2-161 C O1 | 2.21      |
| 925062 | AB2-161 E O1 | 3.6       |
| 925171 | AB2-174 C O1 | 3.45      |
| 925172 | AB2-174 E O1 | 3.12      |
| 925331 | AB2-190 C    | 13.99     |
| 925332 | AB2-190 E    | 5.99      |
| 925821 | AC1-061      | 0.0       |
| 926071 | AC1-086 C    | 9.6       |
| 926072 | AC1-086 E    | 4.37      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 927221 | AC1-216 C O1 | 6.52      |
| 927222 | AC1-216 E O1 | 5.13      |
| 930862 | AB1-132 E O1 | 2.79      |
| 931232 | AB1-173 E    | 0.5       |
| 931242 | AB1-173AE    | 0.5       |
| 932581 | AC2-078 C O1 | 3.58      |
| 932582 | AC2-078 E O1 | 5.84      |
| 932591 | AC2-079 C O1 | 2.93      |
| 932592 | AC2-079 E O1 | 4.79      |
| 934011 | AD1-025 C    | 11.2      |
| 934012 | AD1-025 E    | 6.64      |
| 934201 | AD1-047 C    | 3.82      |
| 934202 | AD1-047 E    | 2.55      |
| 934571 | AD1-082 C    | 5.03      |
| 934572 | AD1-082 E    | 2.87      |
| 935161 | AD1-151 C O1 | 11.24     |
| 935162 | AD1-151 E O1 | 7.49      |
| 935211 | AD1-156 C    | 0.31      |
| 935212 | AD1-156 E    | 1.68      |
| 936041 | AD2-007      | 1.19      |
| 936051 | AD2-008 C    | 1.95      |
| 936052 | AD2-008 E    | 4.25      |
| 936661 | AD2-085 C    | 1.79      |
| 936662 | AD2-085 E    | 2.92      |
| 936711 | AD2-090 C O1 | 2.72      |
| 936712 | AD2-090 E O1 | 1.81      |
| 937571 | AD2-169 C    | 4.62      |
| 937572 | AD2-169 E    | 3.08      |
| 938631 | AE1-085 C O1 | 9.3       |
| 938632 | AE1-085 E O1 | 6.2       |
| 938771 | AE1-103 C O1 | 1.36      |
| 938772 | AE1-103 E O1 | 1.87      |
| 939071 | AE1-135 C O1 | 12.82     |
| 939072 | AE1-135 E O1 | 8.55      |
| 939191 | AE1-149 C O1 | 9.91      |
| 939192 | AE1-149 E O1 | 6.61      |
| 939311 | AE1-162 C    | 0.87      |
| 939312 | AE1-162 E    | 0.58      |
| 940061 | AE1-248 C O1 | 10.45     |
| 940062 | AE1-248 E O1 | 6.97      |
| 940071 | AE1-249 C    | 5.87      |
| 940072 | AE1-249 E    | 4.38      |
| 940431 | AE2-027 C O2 | 18.56     |
| 940432 | AE2-027 E O2 | 12.37     |
| 940481 | AE2-033 C    | 11.55     |
| 940482 | AE2-033 E    | 7.78      |
| 940541 | AE2-040      | 2.6       |
| 940641 | AE2-051 C O2 | 13.72     |
| 940642 | AE2-051 E O2 | 9.15      |
| 940651 | AE2-052      | 3.32      |
| 940891 | AE2-078 C    | 1.04      |
| 940892 | AE2-078 E    | 0.53      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 940901     | AE2-079 C    | 1.04      |
| 940902     | AE2-079 E    | 0.53      |
| 940911     | AE2-080 C    | 1.04      |
| 940912     | AE2-080 E    | 0.53      |
| 941601     | AE2-157 C O2 | 7.34      |
| 941602     | AE2-157 E O2 | 4.89      |
| 942001     | AE2-212 C    | 3.22      |
| 942002     | AE2-212 E    | 2.15      |
| 942161     | AE2-228 C O2 | 3.76      |
| 942162     | AE2-228 E O2 | 2.51      |
| 942341     | AE2-247 C    | 0.78      |
| 942342     | AE2-247 E    | 1.07      |
| 942371     | AE2-250 C O2 | 4.78      |
| 942372     | AE2-250 E O2 | 2.52      |
| 942471     | AE2-260 C O2 | 8.8       |
| 942472     | AE2-260 E O2 | 12.48     |
| 942551     | AE2-270      | 18.74     |
| 942711     | AE2-287 C O2 | 5.41      |
| 942712     | AE2-287 E O2 | 3.61      |
| CARR       | CARR         | 0.27      |
| CBM-S1     | CBM-S1       | 2.45      |
| CBM-S2     | CBM-S2       | 3.57      |
| CBM-W1     | CBM-W1       | 1.56      |
| CBM-W2     | CBM-W2       | 15.09     |
| CIN        | CIN          | 0.76      |
| CPL        | CPL          | 1.94      |
| G-007      | G-007        | 0.85      |
| IPL        | IPL          | 0.46      |
| LGEE       | LGEE         | 0.22      |
| MEC        | MEC          | 1.99      |
| MECS       | MECS         | 0.29      |
| O-066      | O-066        | 5.43      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.2       |

### 14.5.23 Index 23

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME              | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|------------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7719964 | 314562    | 3CLUBHSE | DVP           | 314563  | 6CLUBHSE | DVP         | 1      | DVP_P4-6: CAROLIN T122 | breaker | 208.6      | 232.95                | 267.1                  | DC    | 71.24     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.98      |
| 314704 | 3LAWRENC     | 0.89      |
| 315150 | 1BUGGS 1     | 8.31      |
| 315151 | 1BUGGS 2     | 8.31      |
| 315158 | 1KERR 1      | 0.19      |
| 315159 | 1KERR 2      | 0.79      |
| 315160 | 1KERR 3      | 0.78      |
| 315161 | 1KERR 4      | 0.78      |
| 315162 | 1KERR 5      | 0.78      |
| 315163 | 1KERR 6      | 0.78      |
| 315164 | 1KERR 7      | 0.78      |
| 923911 | AB2-031 C O1 | 10.64     |
| 923912 | AB2-031 E O1 | 5.24      |
| 923991 | AB2-040 C O1 | 4.26      |
| 923992 | AB2-040 E O1 | 28.58     |
| 924021 | AB2-043 C O1 | 0.38      |
| 924022 | AB2-043 E O1 | 5.17      |
| 924161 | AB2-060 C O1 | 1.09      |
| 924162 | AB2-060 E O1 | 4.21      |
| 924301 | AB2-077 C O1 | 0.24      |
| 924302 | AB2-077 E O1 | 1.29      |
| 924311 | AB2-078 C O1 | 0.24      |
| 924312 | AB2-078 E O1 | 1.29      |
| 924321 | AB2-079 C O1 | 0.24      |
| 924322 | AB2-079 E O1 | 1.29      |
| 924401 | AB2-089 C    | 1.61      |
| 924402 | AB2-089 E    | 0.83      |
| 925171 | AB2-174 C O1 | 33.34     |
| 925172 | AB2-174 E O1 | 30.17     |
| 925611 | AC1-036 C    | 0.09      |
| 925612 | AC1-036 E    | 0.68      |
| 925781 | AC1-054 C O1 | 5.43      |
| 925782 | AC1-054 E O1 | 2.5       |
| 931231 | AB1-173 C    | 1.31      |
| 931232 | AB1-173 E    | 5.0       |
| 931241 | AB1-173AC    | 1.31      |
| 931242 | AB1-173AE    | 5.0       |
| 934201 | AD1-047 C    | 38.11     |
| 934202 | AD1-047 E    | 25.4      |
| 934231 | AD1-050 C    | 3.55      |
| 934232 | AD1-050 E    | 1.94      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 936261     | AD2-033 C    | 10.76     |
| 936262     | AD2-033 E    | 7.18      |
| 936361     | AD2-046 C O1 | 7.05      |
| 936362     | AD2-046 E O1 | 3.24      |
| 936481     | AD2-063 C O1 | 13.78     |
| 936482     | AD2-063 E O1 | 9.19      |
| 937571     | AD2-169 C    | 47.63     |
| 937572     | AD2-169 E    | 31.75     |
| 939181     | AE1-148 C O1 | 7.07      |
| 939182     | AE1-148 E O1 | 4.71      |
| 939371     | AE1-168 C    | 10.05     |
| 939372     | AE1-168 E    | 6.7       |
| 940241     | AE2-006      | 0.38      |
| 940661     | AE2-053      | 2.63      |
| 942371     | AE2-250 C O2 | 42.87     |
| 942372     | AE2-250 E O2 | 22.63     |
| 942451     | AE2-258      | 2.35      |
| 942711     | AE2-287 C O2 | 42.75     |
| 942712     | AE2-287 E O2 | 28.5      |
| CARR       | CARR         | 0.04      |
| CBM-S1     | CBM-S1       | 0.53      |
| CBM-S2     | CBM-S2       | 0.43      |
| CBM-W1     | CBM-W1       | 0.63      |
| CBM-W2     | CBM-W2       | 3.49      |
| CIN        | CIN          | 0.29      |
| CPL        | CPL          | 0.17      |
| G-007      | G-007        | 0.13      |
| IPL        | IPL          | 0.18      |
| LGEE       | LGEE         | 0.09      |
| MEC        | MEC          | 0.59      |
| MECS       | MECS         | 0.29      |
| O-066      | O-066        | 0.85      |
| RENSSELAER | RENSSELAER   | 0.03      |
| WEC        | WEC          | 0.08      |

## 14.5.24 Index 24

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720045 | 314563    | 6CLUBHSE | DVP           | 940480  | AE2-033 TAP | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 637.0      | 169.69                | 177.46                 | DC    | 49.71     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.24      |
| 314578 | 3HORNRTN     | 3.01      |
| 314704 | 3LAWRENC     | 0.62      |
| 315126 | 1ROARAP2     | 0.97      |
| 315128 | 1ROARAP4     | 0.94      |
| 315139 | 1GASTONA     | 10.52     |
| 315141 | 1GASTONB     | 10.52     |
| 918491 | AA1-063AC OP | 0.77      |
| 918492 | AA1-063AE OP | 2.96      |
| 919691 | AA2-053 C    | 0.9       |
| 919692 | AA2-053 E    | 3.15      |
| 920671 | AA2-174 C    | 0.04      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 5.04      |
| 923912 | AB2-031 E O1 | 2.48      |
| 923991 | AB2-040 C O1 | 2.02      |
| 923992 | AB2-040 E O1 | 13.53     |
| 924021 | AB2-043 C O1 | 0.3       |
| 924022 | AB2-043 E O1 | 4.06      |
| 924161 | AB2-060 C O1 | 0.86      |
| 924162 | AB2-060 E O1 | 3.3       |
| 924301 | AB2-077 C O1 | 0.19      |
| 924302 | AB2-077 E O1 | 1.02      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924312 | AB2-078 E O1 | 1.02      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924322 | AB2-079 E O1 | 1.02      |
| 924401 | AB2-089 C    | 1.6       |
| 924402 | AB2-089 E    | 0.83      |
| 924511 | AB2-100 C    | 52.6      |
| 924512 | AB2-100 E    | 25.91     |
| 925171 | AB2-174 C O1 | 17.74     |
| 925172 | AB2-174 E O1 | 16.05     |
| 925781 | AC1-054 C O1 | 5.59      |
| 925782 | AC1-054 E O1 | 2.58      |
| 926071 | AC1-086 C    | 97.12     |
| 926072 | AC1-086 E    | 44.2      |
| 930861 | AB1-132 C O1 | 8.04      |
| 930862 | AB1-132 E O1 | 28.26     |
| 931231 | AB1-173 C    | 0.62      |
| 931232 | AB1-173 E    | 2.37      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.62      |
| 931242     | AB1-173AE    | 2.37      |
| 934201     | AD1-047 C    | 18.04     |
| 934202     | AD1-047 E    | 12.03     |
| 934231     | AD1-050 C    | 3.53      |
| 934232     | AD1-050 E    | 1.93      |
| 936261     | AD2-033 C    | 8.4       |
| 936262     | AD2-033 E    | 5.6       |
| 936361     | AD2-046 C O1 | 6.38      |
| 936362     | AD2-046 E O1 | 2.93      |
| 936481     | AD2-063 C O1 | 10.79     |
| 936482     | AD2-063 E O1 | 7.19      |
| 937571     | AD2-169 C    | 19.53     |
| 937572     | AD2-169 E    | 13.02     |
| 939071     | AE1-135 C O1 | 94.21     |
| 939072     | AE1-135 E O1 | 62.81     |
| 939181     | AE1-148 C O1 | 6.33      |
| 939182     | AE1-148 E O1 | 4.22      |
| 940661     | AE2-053      | 2.36      |
| 942371     | AE2-250 C O2 | 29.4      |
| 942372     | AE2-250 E O2 | 15.52     |
| 942451     | AE2-258      | 1.85      |
| 942471     | AE2-260 C O2 | 64.93     |
| 942472     | AE2-260 E O2 | 92.09     |
| 942711     | AE2-287 C O2 | 29.82     |
| 942712     | AE2-287 E O2 | 19.88     |
| CARR       | CARR         | 0.13      |
| CBM-S1     | CBM-S1       | 1.42      |
| CBM-S2     | CBM-S2       | 1.84      |
| CBM-W1     | CBM-W1       | 1.17      |
| CBM-W2     | CBM-W2       | 8.98      |
| CIN        | CIN          | 0.55      |
| CPL        | CPL          | 1.02      |
| G-007      | G-007        | 0.43      |
| IPL        | IPL          | 0.34      |
| LGEE       | LGEE         | 0.16      |
| MEC        | MEC          | 1.3       |
| MECS       | MECS         | 0.38      |
| O-066      | O-066        | 2.72      |
| RENSSELAER | RENSSELAER   | 0.1       |
| WEC        | WEC          | 0.15      |

## 14.5.25 Index 25

| ID       | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|----------|-----------|----------|---------------|---------|-------------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 12453930 | 314563    | 6CLUBHSE | DVP           | 942470  | AE2-260 TAP | DVP         | 1      | DVP_P4-2: 23872 | breaker | 427.0      | 104.04                | 114.35                 | DC    | 44.04     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.1       |
| 314704 | 3LAWRENC     | 0.55      |
| 315150 | 1BUGGS 1     | 4.66      |
| 315151 | 1BUGGS 2     | 4.66      |
| 923911 | AB2-031 C O1 | 4.0       |
| 923912 | AB2-031 E O1 | 1.97      |
| 923991 | AB2-040 C O1 | 1.6       |
| 923992 | AB2-040 E O1 | 10.75     |
| 924022 | AB2-043 E O1 | 3.03      |
| 924162 | AB2-060 E O1 | 2.47      |
| 924302 | AB2-077 E O1 | 0.75      |
| 924312 | AB2-078 E O1 | 0.75      |
| 924322 | AB2-079 E O1 | 0.75      |
| 925171 | AB2-174 C O1 | 14.8      |
| 925172 | AB2-174 E O1 | 13.39     |
| 925612 | AC1-036 E    | 0.4       |
| 931231 | AB1-173 C    | 0.49      |
| 931232 | AB1-173 E    | 1.88      |
| 931241 | AB1-173AC    | 0.49      |
| 931242 | AB1-173AE    | 1.88      |
| 934201 | AD1-047 C    | 14.34     |
| 934202 | AD1-047 E    | 9.56      |
| 936261 | AD2-033 C    | 6.32      |
| 936262 | AD2-033 E    | 4.21      |
| 936361 | AD2-046 C O1 | 3.83      |
| 936362 | AD2-046 E O1 | 1.76      |
| 936481 | AD2-063 C O1 | 8.08      |
| 936482 | AD2-063 E O1 | 5.39      |
| 937571 | AD2-169 C    | 14.41     |
| 937572 | AD2-169 E    | 9.61      |
| 939071 | AE1-135 C O1 | 90.68     |
| 939072 | AE1-135 E O1 | 60.45     |
| 939181 | AE1-148 C O1 | 3.86      |
| 939182 | AE1-148 E O1 | 2.58      |
| 940241 | AE2-006      | 0.22      |
| 940481 | AE2-033 C    | 67.26     |
| 940482 | AE2-033 E    | 45.34     |
| 940661 | AE2-053      | 1.44      |
| 942371 | AE2-250 C O2 | 26.69     |
| 942372 | AE2-250 E O2 | 14.09     |
| 942451 | AE2-258      | 1.38      |
| 942711 | AE2-287 C O2 | 26.42     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 942712     | AE2-287 E O2 | 17.62     |
| BLUEG      | BLUEG        | 0.16      |
| CALDERWOOD | CALDERWOOD   | 0.06      |
| CANNELTON  | CANNELTON    | 0.01      |
| CARR       | CARR         | 0.0       |
| CATAWBA    | CATAWBA      | 0.07      |
| CHEOAH     | CHEOAH       | 0.06      |
| CHILHOWEE  | CHILHOWEE    | 0.02      |
| COFFEEN    | COFFEEN      | 0.02      |
| COTTONWOOD | COTTONWOOD   | 0.2       |
| DUCKCREEK  | DUCKCREEK    | 0.04      |
| EDWARDS    | EDWARDS      | 0.02      |
| ELMERSMITH | ELMERSMITH   | 0.02      |
| FARMERCITY | FARMERCITY   | 0.02      |
| G-007      | G-007        | 0.0       |
| GIBSON     | GIBSON       | 0.01      |
| HAMLET     | HAMLET       | 0.19      |
| NEWTON     | NEWTON       | 0.06      |
| O-066      | O-066        | 0.01      |
| PRAIRIE    | PRAIRIE      | 0.14      |
| RENSSELAER | RENSSELAER   | 0.0       |
| SANTEETLA  | SANTEETLA    | 0.02      |
| SMITHLAND  | SMITHLAND    | 0.01      |
| TATANKA    | TATANKA      | 0.03      |
| TILTON     | TILTON       | 0.02      |
| TRIMBLE    | TRIMBLE      | 0.02      |
| TVA        | TVA          | 0.16      |
| UNIONPOWER | UNIONPOWER   | 0.09      |

## 14.5.26 Index 26

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090417 | 314569    | 6EARLEYS | DVP           | 314575  | 6NUCO TP | DVP         | 1      | DVP_P1-2: LN 2131 | single | 571.52     | 124.87                | 126.09                 | DC    | 6.96      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.07      |
| 314704 | 3LAWRENC     | 0.14      |
| 315126 | 1ROARAP2     | 0.96      |
| 315128 | 1ROARAP4     | 0.92      |
| 315131 | 1EDGECEMA    | 9.42      |
| 315132 | 1EDGECEMB    | 9.42      |
| 315136 | 1ROSEMG1     | 1.68      |
| 315137 | 1ROSEMS1     | 1.04      |
| 315138 | 1ROSEMG2     | 0.79      |
| 315139 | 1GASTONA     | 2.37      |
| 315141 | 1GASTONB     | 2.37      |
| 315159 | 1KERR 2      | 0.53      |
| 315163 | 1KERR 6      | 0.52      |
| 315164 | 1KERR 7      | 0.52      |
| 315292 | 1DOMTR78     | 2.01      |
| 315293 | 1DOMTR9      | 1.64      |
| 315294 | 1DOMTR10     | 2.98      |
| 917331 | Z2-043 C     | 0.46      |
| 917341 | Z2-044 C     | 0.17      |
| 917511 | Z2-088 C OP1 | 1.67      |
| 918491 | AA1-063AC OP | 1.35      |
| 918511 | AA1-065 C OP | 2.38      |
| 918531 | AA1-067 C    | 0.36      |
| 918561 | AA1-072 C    | 0.07      |
| 919691 | AA2-053 C    | 1.22      |
| 919701 | AA2-057 C    | 7.67      |
| 920041 | AA2-088 C OP | 0.49      |
| 920591 | AA2-165 C    | 0.13      |
| 920671 | AA2-174 C    | 0.06      |
| 920691 | AA2-178 C    | 2.36      |
| 923911 | AB2-031 C O1 | 1.74      |
| 923991 | AB2-040 C O1 | 0.7       |
| 924151 | AB2-059 C O1 | 1.28      |
| 924401 | AB2-089 C    | 1.24      |
| 924491 | AB2-098 C    | 0.99      |
| 924501 | AB2-099 C    | 0.95      |
| 924511 | AB2-100 C    | 7.12      |
| 925121 | AB2-169 C    | 1.5       |
| 925171 | AB2-174 C O1 | 5.21      |
| 925591 | AC1-034 C    | 6.83      |
| 925781 | AC1-054 C O1 | 4.49      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 926071     | AC1-086 C    | 21.85     |
| 926201     | AC1-098 C    | 7.82      |
| 926211     | AC1-099 C    | 2.62      |
| 927021     | AC1-189 C    | 13.7      |
| 927141     | AC1-208 C    | 10.09     |
| 930401     | AB1-081 C O1 | 1.09      |
| 930861     | AB1-132 C O1 | 1.81      |
| 931231     | AB1-173 C    | 0.21      |
| 931241     | AB1-173AC    | 0.21      |
| 932631     | AC2-084 C    | 11.15     |
| 933991     | AD1-023 C    | 27.21     |
| 934201     | AD1-047 C    | 6.24      |
| 934231     | AD1-050 C    | 2.73      |
| 934331     | AD1-057 C O1 | 10.33     |
| 934521     | AD1-076 C    | 110.74    |
| 936401     | AD2-051 C O1 | 15.92     |
| 936531     | AD2-068 C    | 6.56      |
| 936701     | AD2-089 C    | 9.29      |
| 937571     | AD2-169 C    | 8.21      |
| 938171     | AE1-026 C1 O | 58.58     |
| 938172     | AE1-026 C2 O | 8.47      |
| 938221     | AE1-035 C    | 4.88      |
| 938661     | AE1-088      | 6.3       |
| 939071     | AE1-135 C O1 | 11.69     |
| 940491     | AE2-034 C    | 16.92     |
| 940521     | AE2-037 C O2 | 15.57     |
| 940571     | AE2-044 C    | 4.47      |
| 941541     | AE2-151 C    | 1.97      |
| 941951     | AE2-207      | 2.89      |
| 942371     | AE2-250 C O2 | 5.82      |
| 942471     | AE2-260 C O2 | 8.16      |
| 942711     | AE2-287 C O2 | 6.96      |
| 943171     | AE2-346 C    | 2.85      |
| AA2-074    | AA2-074      | 2.74      |
| CARR       | CARR         | 0.19      |
| CBM-S1     | CBM-S1       | 6.01      |
| CBM-S2     | CBM-S2       | 7.07      |
| CBM-W1     | CBM-W1       | 6.25      |
| CBM-W2     | CBM-W2       | 39.45     |
| CIN        | CIN          | 2.8       |
| CPL        | CPL          | 4.02      |
| IPL        | IPL          | 1.76      |
| LGEE       | LGEE         | 0.81      |
| MEC        | MEC          | 6.18      |
| MECS       | MECS         | 2.74      |
| RENSSELAER | RENSSELAER   | 0.15      |
| WEC        | WEC          | 0.75      |

## 14.5.27 Index 27

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090469 | 314575    | 6NUCO TP | DVP           | 919140  | AA1-138 TAP | DVP         | 1      | DVP_P1-2: LN 2092 | single | 571.52     | 119.27                | 120.48                 | DC    | 6.95      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.07      |
| 314704 | 3LAWRENC     | 0.14      |
| 315126 | 1ROARAP2     | 0.96      |
| 315128 | 1ROARAP4     | 0.92      |
| 315131 | 1EDGECEMA    | 9.42      |
| 315132 | 1EDGECEMB    | 9.42      |
| 315136 | 1ROSEMG1     | 1.68      |
| 315137 | 1ROSEMS1     | 1.04      |
| 315138 | 1ROSEMG2     | 0.79      |
| 315139 | 1GASTONA     | 2.37      |
| 315141 | 1GASTONB     | 2.37      |
| 315159 | 1KERR 2      | 0.53      |
| 315163 | 1KERR 6      | 0.52      |
| 315164 | 1KERR 7      | 0.52      |
| 315292 | 1DOMTR78     | 2.01      |
| 315293 | 1DOMTR9      | 1.64      |
| 315294 | 1DOMTR10     | 2.98      |
| 916041 | Z1-036 C     | 1.64      |
| 917331 | Z2-043 C     | 0.46      |
| 917341 | Z2-044 C     | 0.17      |
| 917511 | Z2-088 C OP1 | 1.67      |
| 918491 | AA1-063AC OP | 1.35      |
| 918511 | AA1-065 C OP | 2.38      |
| 918531 | AA1-067 C    | 0.36      |
| 918561 | AA1-072 C    | 0.07      |
| 919691 | AA2-053 C    | 1.22      |
| 919701 | AA2-057 C    | 7.67      |
| 920041 | AA2-088 C OP | 0.49      |
| 920591 | AA2-165 C    | 0.13      |
| 920671 | AA2-174 C    | 0.06      |
| 920691 | AA2-178 C    | 2.36      |
| 923911 | AB2-031 C O1 | 1.74      |
| 923991 | AB2-040 C O1 | 0.7       |
| 924151 | AB2-059 C O1 | 1.28      |
| 924401 | AB2-089 C    | 1.24      |
| 924491 | AB2-098 C    | 0.99      |
| 924501 | AB2-099 C    | 0.95      |
| 924511 | AB2-100 C    | 7.11      |
| 925121 | AB2-169 C    | 1.5       |
| 925171 | AB2-174 C O1 | 5.2       |
| 925591 | AC1-034 C    | 6.83      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925781     | AC1-054 C O1 | 4.49      |
| 926071     | AC1-086 C    | 21.84     |
| 926201     | AC1-098 C    | 7.82      |
| 926211     | AC1-099 C    | 2.62      |
| 927021     | AC1-189 C    | 13.69     |
| 927141     | AC1-208 C    | 10.08     |
| 930401     | AB1-081 C O1 | 1.09      |
| 930861     | AB1-132 C O1 | 1.81      |
| 931231     | AB1-173 C    | 0.21      |
| 931241     | AB1-173AC    | 0.21      |
| 932631     | AC2-084 C    | 11.14     |
| 933991     | AD1-023 C    | 27.21     |
| 934201     | AD1-047 C    | 6.24      |
| 934231     | AD1-050 C    | 2.73      |
| 934331     | AD1-057 C O1 | 10.32     |
| 934521     | AD1-076 C    | 110.71    |
| 936401     | AD2-051 C O1 | 15.91     |
| 936531     | AD2-068 C    | 6.55      |
| 936701     | AD2-089 C    | 9.29      |
| 937571     | AD2-169 C    | 8.2       |
| 938171     | AE1-026 C1 O | 58.56     |
| 938172     | AE1-026 C2 O | 8.47      |
| 938221     | AE1-035 C    | 4.88      |
| 938661     | AE1-088      | 6.3       |
| 939071     | AE1-135 C O1 | 11.68     |
| 940491     | AE2-034 C    | 16.91     |
| 940521     | AE2-037 C O2 | 15.57     |
| 940571     | AE2-044 C    | 4.47      |
| 941541     | AE2-151 C    | 1.97      |
| 941951     | AE2-207      | 2.89      |
| 942371     | AE2-250 C O2 | 5.81      |
| 942471     | AE2-260 C O2 | 8.16      |
| 942711     | AE2-287 C O2 | 6.95      |
| 943171     | AE2-346 C    | 2.85      |
| AA2-074    | AA2-074      | 2.73      |
| CARR       | CARR         | 0.19      |
| CBM-S1     | CBM-S1       | 5.98      |
| CBM-S2     | CBM-S2       | 7.05      |
| CBM-W1     | CBM-W1       | 6.2       |
| CBM-W2     | CBM-W2       | 39.24     |
| CIN        | CIN          | 2.78      |
| CPL        | CPL          | 4.02      |
| IPL        | IPL          | 1.74      |
| LGEE       | LGEE         | 0.8       |
| MEC        | MEC          | 6.14      |
| MECS       | MECS         | 2.71      |
| RENSSELAER | RENSSELAER   | 0.15      |
| WEC        | WEC          | 0.75      |

## 14.5.28 Index 28

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|-------------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090712 | 314579    | 6HORNRTN | DVP           | 934330  | AD1-057 TAP | DVP         | 1      | DVP_P1-2: LN 238-B | single | 441.8      | 127.63                | 130.94                 | DC    | 14.61     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.3       |
| 315115 | 1S HAMPT1    | 0.59      |
| 315126 | 1ROARAP2     | 1.2       |
| 315128 | 1ROARAP4     | 1.15      |
| 315136 | 1ROSEMG1     | 3.99      |
| 315137 | 1ROSEMS1     | 2.47      |
| 315138 | 1ROSEMG2     | 1.87      |
| 315139 | 1GASTONA     | 4.78      |
| 315141 | 1GASTONB     | 4.78      |
| 315150 | 1BUGGS 1     | 4.52      |
| 315151 | 1BUGGS 2     | 4.52      |
| 315158 | 1KERR 1      | 0.13      |
| 315159 | 1KERR 2      | 0.55      |
| 315160 | 1KERR 3      | 0.54      |
| 315161 | 1KERR 4      | 0.54      |
| 315162 | 1KERR 5      | 0.54      |
| 315163 | 1KERR 6      | 0.54      |
| 315164 | 1KERR 7      | 0.54      |
| 917331 | Z2-043 C     | 0.12      |
| 918491 | AA1-063AC OP | 0.96      |
| 918511 | AA1-065 C OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 1.11      |
| 920041 | AA2-088 C OP | 0.54      |
| 920671 | AA2-174 C    | 0.05      |
| 923801 | AB2-015 C O1 | 4.25      |
| 923911 | AB2-031 C O1 | 3.11      |
| 923991 | AB2-040 C O1 | 1.24      |
| 924021 | AB2-043 C O1 | 0.18      |
| 924161 | AB2-060 C O1 | 0.5       |
| 924301 | AB2-077 C O1 | 0.11      |
| 924311 | AB2-078 C O1 | 0.11      |
| 924321 | AB2-079 C O1 | 0.11      |
| 924401 | AB2-089 C    | 1.36      |
| 924501 | AB2-099 C    | 0.33      |
| 924511 | AB2-100 C    | 21.77     |
| 925171 | AB2-174 C O1 | 10.05     |
| 925611 | AC1-036 C    | 0.04      |
| 925781 | AC1-054 C O1 | 5.04      |
| 926071 | AC1-086 C    | 44.1      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 930861     | AB1-132 C O1 | 3.65      |
| 931231     | AB1-173 C    | 0.38      |
| 931241     | AB1-173AC    | 0.38      |
| 933991     | AD1-023 C    | 4.49      |
| 934201     | AD1-047 C    | 11.13     |
| 934231     | AD1-050 C    | 3.0       |
| 934521     | AD1-076 C    | 16.11     |
| 936261     | AD2-033 C    | 5.0       |
| 936361     | AD2-046 C O1 | 4.59      |
| 936401     | AD2-051 C O1 | 4.71      |
| 936481     | AD2-063 C O1 | 6.38      |
| 936711     | AD2-090 C O1 | 4.16      |
| 937571     | AD2-169 C    | 13.44     |
| 938171     | AE1-026 C1 O | 10.29     |
| 938172     | AE1-026 C2 O | 1.49      |
| 938221     | AE1-035 C    | 1.06      |
| 938771     | AE1-103 C O1 | 1.63      |
| 939071     | AE1-135 C O1 | 38.52     |
| 939181     | AE1-148 C O1 | 4.5       |
| 939371     | AE1-168 C    | 4.69      |
| 940241     | AE2-006      | 0.18      |
| 940481     | AE2-033 C    | 28.57     |
| 940661     | AE2-053      | 1.68      |
| 941541     | AE2-151 C    | 0.58      |
| 942371     | AE2-250 C O2 | 13.96     |
| 942451     | AE2-258      | 1.09      |
| 942471     | AE2-260 C O2 | 26.59     |
| 942711     | AE2-287 C O2 | 14.61     |
| 943171     | AE2-346 C    | 1.0       |
| BLUEG      | BLUEG        | 3.44      |
| CALDERWOOD | CALDERWOOD   | 0.68      |
| CANNELTON  | CANNELTON    | 0.23      |
| CARR       | CARR         | 0.0       |
| CATAWBA    | CATAWBA      | 0.66      |
| CHEOAH     | CHEOAH       | 0.64      |
| CHILHOWEE  | CHILHOWEE    | 0.22      |
| COFFEEN    | COFFEEN      | 0.4       |
| COTTONWOOD | COTTONWOOD   | 2.3       |
| DUCKCREEK  | DUCKCREEK    | 0.82      |
| EDWARDS    | EDWARDS      | 0.37      |
| ELMERSMITH | ELMERSMITH   | 0.41      |
| FARMERCITY | FARMERCITY   | 0.29      |
| G-007A     | G-007A       | 0.11      |
| GIBSON     | GIBSON       | 0.15      |
| HAMLET     | HAMLET       | 1.33      |
| NEWTON     | NEWTON       | 1.04      |
| PRAIRIE    | PRAIRIE      | 2.16      |
| RENSSELAER | RENSSELAER   | 0.0       |
| SANTEETLA  | SANTEETLA    | 0.19      |
| SMITHLAND  | SMITHLAND    | 0.19      |
| TATANKA    | TATANKA      | 0.49      |
| TILTON     | TILTON       | 0.44      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TRIMBLE</b>    | TRIMBLE    | 0.38             |
| <b>TVA</b>        | TVA        | 1.93             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.95             |
| <b>VFT</b>        | VFT        | 0.27             |

## 14.5.29 Index 29

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME           | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|---------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090229 | 314583    | 6LAKEVEW | DVP           | 314561  | 6CAROLNA | DVP         | 1      | DVP_P1-2: LN 2056-A | single | 375.06     | 146.25                | 147.8                  | DC    | 5.8       |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314704     | 3LAWRENC     | 0.13      |
| 315136     | 1ROSEMG1     | 5.49      |
| 315137     | 1ROSEMS1     | 3.41      |
| 315138     | 1ROSEMG2     | 2.57      |
| 315139     | 1GASTONA     | 7.65      |
| 315141     | 1GASTONB     | 7.65      |
| 923851     | AB2-025 C    | 0.27      |
| 924511     | AB2-100 C    | 21.55     |
| 926071     | AC1-086 C    | 70.57     |
| 930861     | AB1-132 C O1 | 5.84      |
| 934233     | AD1-050 BAT  | 3.51      |
| 934331     | AD1-057 C O1 | 34.97     |
| 935211     | AD1-156 C    | 0.07      |
| 938174     | AE1-026 CBAT | 2.88      |
| 938661     | AE1-088      | 2.13      |
| 939071     | AE1-135 C O1 | 34.86     |
| 940481     | AE2-033 C    | 16.11     |
| 940641     | AE2-051 C O2 | 6.47      |
| 942371     | AE2-250 C O2 | 7.17      |
| 942471     | AE2-260 C O2 | 24.41     |
| 942711     | AE2-287 C O2 | 5.8       |
| BLUEG      | BLUEG        | 2.99      |
| CALDERWOOD | CALDERWOOD   | 0.61      |
| CANNELTON  | CANNELTON    | 0.2       |
| CATAWBA    | CATAWBA      | 0.59      |
| CBM-N      | CBM-N        | 0.07      |
| CHEOAH     | CHEOAH       | 0.57      |
| CHILHOWEE  | CHILHOWEE    | 0.2       |
| COFFEEN    | COFFEEN      | 0.35      |
| COTTONWOOD | COTTONWOOD   | 2.05      |
| DUCKCREEK  | DUCKCREEK    | 0.72      |
| EDWARDS    | EDWARDS      | 0.32      |
| ELMERSMITH | ELMERSMITH   | 0.36      |
| FARMERCITY | FARMERCITY   | 0.25      |
| G-007A     | G-007A       | 0.35      |
| GIBSON     | GIBSON       | 0.13      |
| HAMLET     | HAMLET       | 1.2       |
| NEWTON     | NEWTON       | 0.91      |
| NYISO      | NYISO        | 0.31      |
| PRAIRIE    | PRAIRIE      | 1.9       |
| SANTEETLA  | SANTEETLA    | 0.17      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>SMITHLAND</b>  | SMITHLAND  | 0.17             |
| <b>TATANKA</b>    | TATANKA    | 0.43             |
| <b>TILTON</b>     | TILTON     | 0.38             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.33             |
| <b>TVA</b>        | TVA        | 1.72             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.85             |
| <b>VFT</b>        | VFT        | 0.94             |

### 14.5.30 Index 30

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8091025 | 314583    | 6LAKEVEW | DVP           | 314579  | 6HORNRTN | DVP         | 1      | DVP_P1-2: LN 238-B | single | 441.8      | 100.69                | 104.02                 | DC    | 14.68     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.3       |
| 315115 | 1S HAMPT1    | 0.6       |
| 315126 | 1ROARAP2     | 1.2       |
| 315128 | 1ROARAP4     | 1.16      |
| 315139 | 1GASTONA     | 4.79      |
| 315141 | 1GASTONB     | 4.79      |
| 315150 | 1BUGGS 1     | 4.58      |
| 315151 | 1BUGGS 2     | 4.58      |
| 315158 | 1KERR 1      | 0.14      |
| 315159 | 1KERR 2      | 0.55      |
| 315160 | 1KERR 3      | 0.55      |
| 315161 | 1KERR 4      | 0.55      |
| 315162 | 1KERR 5      | 0.55      |
| 315163 | 1KERR 6      | 0.55      |
| 315164 | 1KERR 7      | 0.55      |
| 917331 | Z2-043 C     | 0.12      |
| 918491 | AA1-063AC OP | 0.96      |
| 918511 | AA1-065 C OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 1.12      |
| 920041 | AA2-088 C OP | 0.54      |
| 920671 | AA2-174 C    | 0.05      |
| 923801 | AB2-015 C O1 | 4.3       |
| 923911 | AB2-031 C O1 | 3.12      |
| 923991 | AB2-040 C O1 | 1.25      |
| 924021 | AB2-043 C O1 | 0.18      |
| 924161 | AB2-060 C O1 | 0.51      |
| 924301 | AB2-077 C O1 | 0.11      |
| 924311 | AB2-078 C O1 | 0.11      |
| 924321 | AB2-079 C O1 | 0.11      |
| 924401 | AB2-089 C    | 1.37      |
| 924501 | AB2-099 C    | 0.34      |
| 924511 | AB2-100 C    | 21.83     |
| 925171 | AB2-174 C O1 | 10.09     |
| 925611 | AC1-036 C    | 0.04      |
| 925781 | AC1-054 C O1 | 5.08      |
| 926071 | AC1-086 C    | 44.21     |
| 930861 | AB1-132 C O1 | 3.66      |
| 931231 | AB1-173 C    | 0.38      |
| 931241 | AB1-173AC    | 0.38      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 933991     | AD1-023 C    | 4.56      |
| 934201     | AD1-047 C    | 11.18     |
| 934231     | AD1-050 C    | 3.02      |
| 934521     | AD1-076 C    | 16.4      |
| 936261     | AD2-033 C    | 5.07      |
| 936361     | AD2-046 C O1 | 4.64      |
| 936401     | AD2-051 C O1 | 4.76      |
| 936481     | AD2-063 C O1 | 6.46      |
| 936711     | AD2-090 C O1 | 4.2       |
| 937571     | AD2-169 C    | 13.49     |
| 938171     | AE1-026 C1 O | 10.44     |
| 938172     | AE1-026 C2 O | 1.51      |
| 938221     | AE1-035 C    | 1.07      |
| 938771     | AE1-103 C O1 | 1.65      |
| 939071     | AE1-135 C O1 | 38.62     |
| 939181     | AE1-148 C O1 | 4.55      |
| 939371     | AE1-168 C    | 4.77      |
| 940241     | AE2-006      | 0.18      |
| 940481     | AE2-033 C    | 28.65     |
| 940661     | AE2-053      | 1.69      |
| 941541     | AE2-151 C    | 0.59      |
| 942371     | AE2-250 C O2 | 14.01     |
| 942451     | AE2-258      | 1.1       |
| 942471     | AE2-260 C O2 | 26.67     |
| 942711     | AE2-287 C O2 | 14.68     |
| 943171     | AE2-346 C    | 1.01      |
| BLUEG      | BLUEG        | 2.99      |
| CALDERWOOD | CALDERWOOD   | 0.63      |
| CANNELTON  | CANNELTON    | 0.2       |
| CATAWBA    | CATAWBA      | 0.62      |
| CBM-N      | CBM-N        | 0.06      |
| CHEOAH     | CHEOAH       | 0.59      |
| CHILHOWEE  | CHILHOWEE    | 0.2       |
| COFFEEN    | COFFEEN      | 0.35      |
| COTTONWOOD | COTTONWOOD   | 2.11      |
| DUCKCREEK  | DUCKCREEK    | 0.72      |
| EDWARDS    | EDWARDS      | 0.32      |
| ELMERSMITH | ELMERSMITH   | 0.36      |
| FARMERCITY | FARMERCITY   | 0.26      |
| G-007A     | G-007A       | 0.32      |
| GIBSON     | GIBSON       | 0.13      |
| HAMLET     | HAMLET       | 1.28      |
| NEWTON     | NEWTON       | 0.91      |
| NYISO      | NYISO        | 0.27      |
| PRAIRIE    | PRAIRIE      | 1.92      |
| SANTEETLA  | SANTEETLA    | 0.18      |
| SMITHLAND  | SMITHLAND    | 0.17      |
| TATANKA    | TATANKA      | 0.43      |
| TILTON     | TILTON       | 0.38      |
| TRIMBLE    | TRIMBLE      | 0.33      |
| TVA        | TVA          | 1.77      |
| UNIONPOWER | UNIONPOWER   | 0.88      |

| Bus # | Bus | MW Impact |
|-------|-----|-----------|
| VFT   | VFT | 0.86      |

### 14.5.31 Index 31

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090859 | 314591    | 6NASH    | DVP           | 304226  | 6PA-RMOUNT#4 | CPL         | 1      | DVP_P1-2: LN 2058 | single | 470.0      | 120.93                | 122.28                 | DC    | 6.34      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.13      |
| 315115 | 1S HAMPT1    | 0.55      |
| 315126 | 1ROARAP2     | 0.82      |
| 315128 | 1ROARAP4     | 0.79      |
| 315131 | 1EDGECEMA    | 25.25     |
| 315132 | 1EDGECEMB    | 25.25     |
| 315136 | 1ROSEMG1     | 2.14      |
| 315137 | 1ROSEMS1     | 1.33      |
| 315138 | 1ROSEMG2     | 1.0       |
| 315139 | 1GASTONA     | 2.57      |
| 315141 | 1GASTONB     | 2.57      |
| 315292 | 1DOMTR78     | 0.6       |
| 315293 | 1DOMTR9      | 0.49      |
| 315294 | 1DOMTR10     | 0.88      |
| 901081 | W1-029 C     | 0.25      |
| 916041 | Z1-036 C     | 0.3       |
| 917331 | Z2-043 C     | 0.23      |
| 917341 | Z2-044 C     | 0.21      |
| 917511 | Z2-088 C OP1 | 1.49      |
| 918491 | AA1-063AC OP | 0.8       |
| 918511 | AA1-065 C OP | 0.74      |
| 918531 | AA1-067 C    | 0.15      |
| 918561 | AA1-072 C    | 0.03      |
| 919691 | AA2-053 C    | 0.84      |
| 919701 | AA2-057 C    | 8.3       |
| 920041 | AA2-088 C OP | 0.47      |
| 920591 | AA2-165 C    | 0.14      |
| 920671 | AA2-174 C    | 0.04      |
| 920691 | AA2-178 C    | 0.55      |
| 923801 | AB2-015 C O1 | 4.03      |
| 923851 | AB2-025 C    | 0.12      |
| 923911 | AB2-031 C O1 | 1.64      |
| 923991 | AB2-040 C O1 | 0.66      |
| 924151 | AB2-059 C O1 | 2.1       |
| 924401 | AB2-089 C    | 0.74      |
| 924491 | AB2-098 C    | 0.41      |
| 924501 | AB2-099 C    | 0.41      |
| 924511 | AB2-100 C    | 8.56      |
| 925121 | AB2-169 C    | 0.5       |
| 925171 | AB2-174 C O1 | 5.03      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925591     | AC1-034 C    | 11.15     |
| 925781     | AC1-054 C O1 | 2.89      |
| 926071     | AC1-086 C    | 23.71     |
| 926201     | AC1-098 C    | 6.04      |
| 926211     | AC1-099 C    | 2.02      |
| 927021     | AC1-189 C    | 9.92      |
| 927141     | AC1-208 C    | 9.24      |
| 930401     | AB1-081 C O1 | 1.78      |
| 930861     | AB1-132 C O1 | 1.96      |
| 931231     | AB1-173 C    | 0.2       |
| 931241     | AB1-173AC    | 0.2       |
| 932631     | AC2-084 C    | 8.61      |
| 933991     | AD1-023 C    | 7.55      |
| 934201     | AD1-047 C    | 5.89      |
| 934231     | AD1-050 C    | 1.64      |
| 934331     | AD1-057 C O1 | 20.2      |
| 934521     | AD1-076 C    | 29.35     |
| 936401     | AD2-051 C O1 | 6.26      |
| 936701     | AD2-089 C    | 14.33     |
| 936711     | AD2-090 C O1 | 3.77      |
| 937571     | AD2-169 C    | 7.54      |
| 938171     | AE1-026 C1 O | 16.65     |
| 938172     | AE1-026 C2 O | 2.41      |
| 938221     | AE1-035 C    | 1.51      |
| 938661     | AE1-088      | 2.09      |
| 938771     | AE1-103 C O1 | 1.59      |
| 939071     | AE1-135 C O1 | 14.38     |
| 940481     | AE2-033 C    | 7.2       |
| 940491     | AE2-034 C    | 3.96      |
| 940521     | AE2-037 C O2 | 5.57      |
| 940571     | AE2-044 C    | 7.3       |
| 941501     | AE2-147 C    | 4.73      |
| 941541     | AE2-151 C    | 0.78      |
| 941951     | AE2-207      | 4.72      |
| 942371     | AE2-250 C O2 | 6.07      |
| 942471     | AE2-260 C O2 | 10.01     |
| 942711     | AE2-287 C O2 | 6.34      |
| 942851     | AE2-304 C    | 0.21      |
| 943171     | AE2-346 C    | 1.23      |
| BLUEG      | BLUEG        | 6.03      |
| CALDERWOOD | CALDERWOOD   | 1.22      |
| CANNELTON  | CANNELTON    | 0.41      |
| CATAWBA    | CATAWBA      | 1.19      |
| CBM-N      | CBM-N        | 0.13      |
| CHEOAH     | CHEOAH       | 1.14      |
| CHILHOWEE  | CHILHOWEE    | 0.4       |
| COFFEEN    | COFFEEN      | 0.7       |
| COTTONWOOD | COTTONWOOD   | 4.09      |
| DUCKCREEK  | DUCKCREEK    | 1.44      |
| EDWARDS    | EDWARDS      | 0.64      |
| ELMERSMITH | ELMERSMITH   | 0.72      |
| FARMERCITY | FARMERCITY   | 0.5       |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007A</b>     | G-007A     | 0.66             |
| <b>GIBSON</b>     | GIBSON     | 0.26             |
| <b>HAMLET</b>     | HAMLET     | 2.34             |
| <b>NEWTON</b>     | NEWTON     | 1.82             |
| <b>NYISO</b>      | NYISO      | 0.55             |
| <b>PRAIRIE</b>    | PRAIRIE    | 3.81             |
| <b>SANTEETLA</b>  | SANTEETLA  | 0.34             |
| <b>SMITHLAND</b>  | SMITHLAND  | 0.34             |
| <b>TATANKA</b>    | TATANKA    | 0.86             |
| <b>TILTON</b>     | TILTON     | 0.76             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.66             |
| <b>TVA</b>        | TVA        | 3.43             |
| <b>UNIONPOWER</b> | UNIONPOWER | 1.7              |
| <b>VFT</b>        | VFT        | 1.75             |

## 14.5.32 Index 32

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type  | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|-------|------------|-----------------------|------------------------|-------|-----------|
| 8242175 | 314625    | 3AULANDR | DVP           | 314568  | 3EARLEYS | DVP         | 1      | DVP_P7-1: LN 56-2012 | tower | 136.0      | 108.01                | 110.2                  | DC    | 6.57      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 0.17      |
| 314578 | 3HORNRTN     | 2.25      |
| 315126 | 1ROARAP2     | 0.77      |
| 315128 | 1ROARAP4     | 0.74      |
| 918491 | AA1-063AC OP | 2.63      |
| 918492 | AA1-063AE OP | 10.17     |
| 919691 | AA2-053 C    | 1.86      |
| 919692 | AA2-053 E    | 6.56      |
| 920671 | AA2-174 C    | 0.09      |
| 920672 | AA2-174 E    | 0.76      |
| 923911 | AB2-031 C O1 | 1.2       |
| 923912 | AB2-031 E O1 | 0.59      |
| 923992 | AB2-040 E O1 | 3.23      |
| 924401 | AB2-089 C    | 0.83      |
| 924402 | AB2-089 E    | 0.43      |
| 925171 | AB2-174 C O1 | 3.42      |
| 925172 | AB2-174 E O1 | 3.1       |
| 925781 | AC1-054 C O1 | 3.12      |
| 925782 | AC1-054 E O1 | 1.44      |
| 926071 | AC1-086 C    | 6.65      |
| 926072 | AC1-086 E    | 3.03      |
| 930862 | AB1-132 E O1 | 1.94      |
| 931232 | AB1-173 E    | 0.56      |
| 931242 | AB1-173AE    | 0.56      |
| 934201 | AD1-047 C    | 4.3       |
| 934202 | AD1-047 E    | 2.87      |
| 934231 | AD1-050 C    | 1.84      |
| 934232 | AD1-050 E    | 1.01      |
| 937571 | AD2-169 C    | 5.91      |
| 937572 | AD2-169 E    | 3.94      |
| 942371 | AE2-250 C O2 | 3.24      |
| 942372 | AE2-250 E O2 | 1.71      |
| 942711 | AE2-287 C O2 | 3.94      |
| 942712 | AE2-287 E O2 | 2.63      |
| CARR   | CARR         | 0.02      |
| CBM-S1 | CBM-S1       | 0.12      |
| CBM-S2 | CBM-S2       | 0.11      |
| CBM-W1 | CBM-W1       | 0.09      |
| CBM-W2 | CBM-W2       | 0.73      |
| CIN    | CIN          | 0.05      |
| CPL    | CPL          | 0.02      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007</b>      | G-007      | 0.07             |
| <b>IPL</b>        | IPL        | 0.03             |
| <b>LGEE</b>       | LGEE       | 0.01             |
| <b>MEC</b>        | MEC        | 0.11             |
| <b>MECS</b>       | MECS       | 0.02             |
| <b>O-066</b>      | O-066      | 0.44             |
| <b>RENSSELAER</b> | RENSSELAER | 0.02             |
| <b>WEC</b>        | WEC        | 0.01             |

### 14.5.33 Index 33

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type  | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|-------|------------|-----------------------|------------------------|-------|-----------|
| 8242143 | 314626    | 3WOODLND | DVP           | 314625  | 3AULANDR | DVP         | 1      | DVP_P7-1: LN 56-2012 | tower | 136.0      | 113.23                | 115.42                 | DC    | 6.57      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 0.17      |
| 314578 | 3HORNRTN     | 2.25      |
| 315126 | 1ROARAP2     | 0.77      |
| 315128 | 1ROARAP4     | 0.74      |
| 918491 | AA1-063AC OP | 2.63      |
| 918492 | AA1-063AE OP | 10.17     |
| 919691 | AA2-053 C    | 1.86      |
| 919692 | AA2-053 E    | 6.56      |
| 920671 | AA2-174 C    | 0.09      |
| 920672 | AA2-174 E    | 0.76      |
| 923911 | AB2-031 C O1 | 1.2       |
| 923912 | AB2-031 E O1 | 0.59      |
| 923992 | AB2-040 E O1 | 3.23      |
| 924401 | AB2-089 C    | 0.83      |
| 924402 | AB2-089 E    | 0.43      |
| 925171 | AB2-174 C O1 | 3.42      |
| 925172 | AB2-174 E O1 | 3.1       |
| 925781 | AC1-054 C O1 | 3.12      |
| 925782 | AC1-054 E O1 | 1.44      |
| 926071 | AC1-086 C    | 6.65      |
| 926072 | AC1-086 E    | 3.03      |
| 930862 | AB1-132 E O1 | 1.94      |
| 931232 | AB1-173 E    | 0.56      |
| 931242 | AB1-173AE    | 0.56      |
| 934201 | AD1-047 C    | 4.3       |
| 934202 | AD1-047 E    | 2.87      |
| 934231 | AD1-050 C    | 1.84      |
| 934232 | AD1-050 E    | 1.01      |
| 937571 | AD2-169 C    | 5.91      |
| 937572 | AD2-169 E    | 3.94      |
| 942371 | AE2-250 C O2 | 3.24      |
| 942372 | AE2-250 E O2 | 1.71      |
| 942711 | AE2-287 C O2 | 3.94      |
| 942712 | AE2-287 E O2 | 2.63      |
| CARR   | CARR         | 0.02      |
| CBM-S1 | CBM-S1       | 0.12      |
| CBM-S2 | CBM-S2       | 0.11      |
| CBM-W1 | CBM-W1       | 0.09      |
| CBM-W2 | CBM-W2       | 0.73      |
| CIN    | CIN          | 0.05      |
| CPL    | CPL          | 0.02      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>G-007</b>      | G-007      | 0.07             |
| <b>IPL</b>        | IPL        | 0.03             |
| <b>LGEE</b>       | LGEE       | 0.01             |
| <b>MEC</b>        | MEC        | 0.11             |
| <b>MECS</b>       | MECS       | 0.02             |
| <b>O-066</b>      | O-066      | 0.44             |
| <b>RENSSELAER</b> | RENSSELAER | 0.02             |
| <b>WEC</b>        | WEC        | 0.01             |

#### 14.5.34 Index 34

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME            | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|----------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090511 | 314691    | 3FARMVIL | DVP           | 314692  | 6FARMVIL | DVP         | 2      | DVP_P1-2: LN 235-A-A | single | 182.64     | 112.64                | 117.59                 | DC    | 9.04      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.8       |
| 314704 | 3LAWRENC     | 0.15      |
| 315150 | 1BUGGS 1     | 9.74      |
| 315151 | 1BUGGS 2     | 9.74      |
| 315158 | 1KERR 1      | 0.2       |
| 315159 | 1KERR 2      | 0.83      |
| 315160 | 1KERR 3      | 0.82      |
| 315161 | 1KERR 4      | 0.82      |
| 315162 | 1KERR 5      | 0.82      |
| 315163 | 1KERR 6      | 0.82      |
| 315164 | 1KERR 7      | 0.82      |
| 315266 | 1PLYWOOD A   | 0.45      |
| 923911 | AB2-031 C O1 | 0.73      |
| 923991 | AB2-040 C O1 | 0.29      |
| 924021 | AB2-043 C O1 | 0.47      |
| 924161 | AB2-060 C O1 | 1.42      |
| 924301 | AB2-077 C O1 | 0.29      |
| 924311 | AB2-078 C O1 | 0.29      |
| 924321 | AB2-079 C O1 | 0.29      |
| 924401 | AB2-089 C    | 1.53      |
| 925171 | AB2-174 C O1 | 2.32      |
| 925611 | AC1-036 C    | 0.24      |
| 925781 | AC1-054 C O1 | 4.85      |
| 925831 | AC1-062      | 0.11      |
| 926271 | AC1-105 C O1 | 3.12      |
| 927261 | AC1-222 C    | 1.31      |
| 931231 | AB1-173 C    | 0.09      |
| 931241 | AB1-173AC    | 0.09      |
| 934201 | AD1-047 C    | 2.6       |
| 934231 | AD1-050 C    | 3.38      |
| 934311 | AD1-055 C    | 0.91      |
| 935221 | AD1-157 C    | 0.55      |
| 935231 | AD1-160 C    | 3.31      |
| 936261 | AD2-033 C    | 24.72     |
| 936331 | AD2-043 C    | 1.7       |
| 936361 | AD2-046 C O1 | 7.7       |
| 936481 | AD2-063 C O1 | 23.29     |
| 937571 | AD2-169 C    | 3.18      |
| 938371 | AE1-056 C    | 19.49     |
| 939181 | AE1-148 C O1 | 7.79      |
| 939371 | AE1-168 C    | 37.77     |

| <b>Bus #</b>      | <b>Bus</b>   | <b>MW Impact</b> |
|-------------------|--------------|------------------|
| <b>940241</b>     | AE2-006      | 1.0              |
| <b>940661</b>     | AE2-053      | 2.89             |
| <b>942371</b>     | AE2-250 C O2 | 3.12             |
| <b>942451</b>     | AE2-258      | 2.9              |
| <b>942461</b>     | AE2-259 C O2 | 36.82            |
| <b>942711</b>     | AE2-287 C O2 | 9.04             |
| <b>CARR</b>       | CARR         | 0.08             |
| <b>CBM-S1</b>     | CBM-S1       | 1.63             |
| <b>CBM-S2</b>     | CBM-S2       | 2.21             |
| <b>CBM-W1</b>     | CBM-W1       | 1.33             |
| <b>CBM-W2</b>     | CBM-W2       | 10.3             |
| <b>CIN</b>        | CIN          | 0.61             |
| <b>CPL</b>        | CPL          | 1.19             |
| <b>IPL</b>        | IPL          | 0.38             |
| <b>LGEE</b>       | LGEE         | 0.18             |
| <b>MEC</b>        | MEC          | 1.47             |
| <b>MECS</b>       | MECS         | 0.46             |
| <b>RENSSELAER</b> | RENSSELAER   | 0.06             |
| <b>WEC</b>        | WEC          | 0.16             |

## 14.5.35 Index 35

| ID      | FROM BUS# | FROM BUS   | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|------------|---------------|---------|-------------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090787 | 314697    | 6SEGE HILL | DVP           | 927250  | AC1-221 TAP | DVP         | 1      | DVP_P1-2: LN 556 | single | 674.92     | 115.67                | 116.76                 | DC    | 8.85      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.4       |
| 314704 | 3LAWRENC     | 0.14      |
| 315150 | 1BUGGS 1     | 17.2      |
| 315151 | 1BUGGS 2     | 17.2      |
| 315153 | 1CLOVER1     | 27.86     |
| 315154 | 1CLOVER2     | 27.5      |
| 315156 | 1HALLBR1     | 0.91      |
| 315158 | 1KERR 1      | 0.22      |
| 315159 | 1KERR 2      | 0.91      |
| 315160 | 1KERR 3      | 0.89      |
| 315161 | 1KERR 4      | 0.89      |
| 315162 | 1KERR 5      | 0.89      |
| 315163 | 1KERR 6      | 0.89      |
| 315164 | 1KERR 7      | 0.89      |
| 315165 | 1HURT 1      | 5.15      |
| 315166 | 1HURT 2      | 5.15      |
| 315171 | 1BREMO 4     | 13.53     |
| 315191 | 1BEARGRDN G1 | 2.03      |
| 315192 | 1BEARGRDN G2 | 2.03      |
| 315193 | 1BEARGRDN S1 | 4.17      |
| 315266 | 1PLYWOOD A   | 2.35      |
| 920291 | AA2-127      | 0.42      |
| 924021 | AB2-043 C O1 | 0.52      |
| 924031 | AB2-045 C    | 0.3       |
| 924161 | AB2-060 C O1 | 1.49      |
| 924301 | AB2-077 C O1 | 0.33      |
| 924311 | AB2-078 C O1 | 0.33      |
| 924321 | AB2-079 C O1 | 0.33      |
| 924401 | AB2-089 C    | 1.61      |
| 925611 | AC1-036 C    | 0.16      |
| 925661 | AC1-042 C    | 1.59      |
| 925781 | AC1-054 C O1 | 4.97      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 11.92     |
| 926021 | AC1-080 C    | 3.98      |
| 926271 | AC1-105 C O1 | 14.49     |
| 926641 | AC1-145 C    | 1.9       |
| 927261 | AC1-222 C    | 10.12     |
| 932511 | AC2-071 C    | 0.3       |
| 934231 | AD1-050 C    | 3.55      |
| 934311 | AD1-055 C    | 7.02      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 934611     | AD1-087 C O1 | 26.93     |
| 934621     | AD1-088 C    | 31.81     |
| 935171     | AD1-152 C O1 | 26.76     |
| 935221     | AD1-157 C    | 0.26      |
| 935231     | AD1-160 C    | 1.55      |
| 936261     | AD2-033 C    | 17.8      |
| 936331     | AD2-043 C    | 13.11     |
| 936361     | AD2-046 C O1 | 8.37      |
| 936481     | AD2-063 C O1 | 20.34     |
| 937481     | AD2-202 C O1 | 7.42      |
| 938371     | AE1-056 C    | 9.12      |
| 939181     | AE1-148 C O1 | 8.48      |
| 939371     | AE1-168 C    | 20.88     |
| 939941     | AE1-230 C1   | 0.72      |
| 940241     | AE2-006      | 0.66      |
| 940661     | AE2-053      | 3.15      |
| 941791     | AE2-182 C    | 5.75      |
| 941801     | AE2-185 C    | 4.49      |
| 941821     | AE2-187 C    | 4.49      |
| 942331     | AE2-246      | 1.39      |
| 942451     | AE2-258      | 3.16      |
| 942461     | AE2-259 C O2 | 14.35     |
| 942671     | AE2-283 C    | 3.95      |
| 942711     | AE2-287 C O2 | 8.85      |
| 942751     | AE2-291 C O2 | 14.91     |
| 942761     | AE2-292 C O2 | 20.56     |
| 943051     | AE2-328 C    | 22.49     |
| AC1-131    | AC1-131      | 5.19      |
| BLUEG      | BLUEG        | 6.75      |
| CALDERWOOD | CALDERWOOD   | 1.59      |
| CANNELTON  | CANNELTON    | 0.47      |
| CATAWBA    | CATAWBA      | 1.7       |
| CBM-N      | CBM-N        | 0.03      |
| CHEOAH     | CHEOAH       | 1.49      |
| CHILHOWEE  | CHILHOWEE    | 0.51      |
| COFFEEN    | COFFEEN      | 0.82      |
| COTTONWOOD | COTTONWOOD   | 5.18      |
| DUCKCREEK  | DUCKCREEK    | 1.66      |
| EDWARDS    | EDWARDS      | 0.74      |
| ELMERSMITH | ELMERSMITH   | 0.84      |
| FARMERCITY | FARMERCITY   | 0.6       |
| G-007A     | G-007A       | 0.3       |
| GIBSON     | GIBSON       | 0.3       |
| HAMLET     | HAMLET       | 3.18      |
| NEWTON     | NEWTON       | 2.12      |
| NYISO      | NYISO        | 0.11      |
| PRAIRIE    | PRAIRIE      | 4.55      |
| SANTEETLA  | SANTEETLA    | 0.44      |
| SMITHLAND  | SMITHLAND    | 0.41      |
| TATANKA    | TATANKA      | 1.01      |
| TILTON     | TILTON       | 0.86      |
| TRIMBLE    | TRIMBLE      | 0.74      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TVA</b>        | TVA        | 4.33             |
| <b>UNIONPOWER</b> | UNIONPOWER | 2.22             |
| <b>VFT</b>        | VFT        | 0.79             |

## 14.5.36 Index 36

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME            | Type  | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|--------------|-------------|--------|----------------------|-------|------------|-----------------------|------------------------|-------|-----------|
| 8241964 | 314702    | 3KERR    | DVP           | 304102  | 3GW KING TAP | CPL         | 1      | DVP_P7-1: LN 22-90-A | tower | 199.0      | 165.34                | 168.21                 | DC    | 12.63     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 315150 | 1BUGGS 1     | 15.54     |
| 315151 | 1BUGGS 2     | 15.54     |
| 315158 | 1KERR 1      | 0.56      |
| 315159 | 1KERR 2      | 2.26      |
| 315160 | 1KERR 3      | 2.23      |
| 315161 | 1KERR 4      | 2.23      |
| 315162 | 1KERR 5      | 2.23      |
| 315163 | 1KERR 6      | 2.23      |
| 315164 | 1KERR 7      | 2.23      |
| 924022 | AB2-043 E O1 | 6.02      |
| 924162 | AB2-060 E O1 | 4.91      |
| 924302 | AB2-077 E O1 | 1.58      |
| 924312 | AB2-078 E O1 | 1.58      |
| 924322 | AB2-079 E O1 | 1.58      |
| 924401 | AB2-089 C    | 4.63      |
| 924402 | AB2-089 E    | 2.38      |
| 925612 | AC1-036 E    | 0.79      |
| 925781 | AC1-054 C O1 | 15.59     |
| 925782 | AC1-054 E O1 | 7.18      |
| 926271 | AC1-105 C O1 | 2.87      |
| 926272 | AC1-105 E O1 | 1.43      |
| 934231 | AD1-050 C    | 10.2      |
| 934232 | AD1-050 E    | 5.57      |
| 935222 | AD1-157 E    | 0.64      |
| 935231 | AD1-160 C    | 0.7       |
| 935232 | AD1-160 E    | 0.97      |
| 936261 | AD2-033 C    | 12.59     |
| 936262 | AD2-033 E    | 8.39      |
| 936361 | AD2-046 C O1 | 17.92     |
| 936362 | AD2-046 E O1 | 8.24      |
| 936481 | AD2-063 C O1 | 16.07     |
| 936482 | AD2-063 E O1 | 10.71     |
| 938371 | AE1-056 C    | 4.14      |
| 938372 | AE1-056 E    | 2.26      |
| 939181 | AE1-148 C O1 | 17.24     |
| 939182 | AE1-148 E O1 | 11.49     |
| 939371 | AE1-168 C    | 11.8      |
| 939372 | AE1-168 E    | 7.86      |
| 940241 | AE2-006      | 0.45      |
| 940661 | AE2-053      | 6.43      |
| 942451 | AE2-258      | 2.74      |

| <b>Bus #</b> | <b>Bus</b>   | <b>MW Impact</b> |
|--------------|--------------|------------------|
| 942461       | AE2-259 C O2 | 4.43             |
| 942462       | AE2-259 E O2 | 2.95             |
| 942711       | AE2-287 C O2 | 7.58             |
| 942712       | AE2-287 E O2 | 5.05             |
| BLUEG        | BLUEG        | 1.99             |
| CALDERWOOD   | CALDERWOOD   | 0.42             |
| CANNELTON    | CANNELTON    | 0.14             |
| CATAWBA      | CATAWBA      | 0.43             |
| CBM-N        | CBM-N        | 0.0              |
| CHEOAH       | CHEOAH       | 0.39             |
| CHILHOWEE    | CHILHOWEE    | 0.14             |
| COFFEEN      | COFFEEN      | 0.23             |
| COTTONWOOD   | COTTONWOOD   | 1.4              |
| DUCKCREEK    | DUCKCREEK    | 0.48             |
| EDWARDS      | EDWARDS      | 0.21             |
| ELMERSMITH   | ELMERSMITH   | 0.24             |
| FARMERCITY   | FARMERCITY   | 0.17             |
| G-007A       | G-007A       | 0.08             |
| GIBSON       | GIBSON       | 0.09             |
| HAMLET       | HAMLET       | 0.82             |
| NEWTON       | NEWTON       | 0.61             |
| NYISO        | NYISO        | 0.01             |
| PRAIRIE      | PRAIRIE      | 1.28             |
| SANTEETLA    | SANTEETLA    | 0.12             |
| SMITHLAND    | SMITHLAND    | 0.11             |
| TATANKA      | TATANKA      | 0.29             |
| TILTON       | TILTON       | 0.25             |
| TRIMBLE      | TRIMBLE      | 0.22             |
| TVA          | TVA          | 1.17             |
| UNIONPOWER   | UNIONPOWER   | 0.59             |
| VFT          | VFT          | 0.21             |

### 14.5.37 Index 37

| ID      | FROM BUS# | FROM BUS | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|----------|---------------|---------|----------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090890 | 314765    | 6MTEAGLE | DVP           | 314749  | 6CHARLVL | DVP         | 1      | DVP_P1-2: LN 556 | single | 661.76     | 102.37                | 103.39                 | DC    | 6.73      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.37      |
| 314704 | 3LAWRENC     | 0.12      |
| 315126 | 1ROARAP2     | 0.33      |
| 315150 | 1BUGGS 1     | 7.72      |
| 315151 | 1BUGGS 2     | 7.72      |
| 315153 | 1CLOVER1     | 8.63      |
| 315154 | 1CLOVER2     | 8.52      |
| 315158 | 1KERR 1      | 0.15      |
| 315159 | 1KERR 2      | 0.63      |
| 315160 | 1KERR 3      | 0.62      |
| 315161 | 1KERR 4      | 0.62      |
| 315162 | 1KERR 5      | 0.62      |
| 315163 | 1KERR 6      | 0.62      |
| 315164 | 1KERR 7      | 0.62      |
| 315170 | 1BREMO 3     | 21.85     |
| 315171 | 1BREMO 4     | 48.01     |
| 315191 | 1BEARGRDN G1 | 7.96      |
| 315192 | 1BEARGRDN G2 | 7.96      |
| 315193 | 1BEARGRDN S1 | 16.37     |
| 315266 | 1PLYWOOD A   | 0.61      |
| 920291 | AA2-127      | 1.65      |
| 923861 | AB2-026 C    | 0.36      |
| 923911 | AB2-031 C O1 | 0.76      |
| 923991 | AB2-040 C O1 | 0.3       |
| 924021 | AB2-043 C O1 | 0.3       |
| 924031 | AB2-045 C    | 0.59      |
| 924161 | AB2-060 C O1 | 0.88      |
| 924301 | AB2-077 C O1 | 0.19      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924401 | AB2-089 C    | 1.19      |
| 925171 | AB2-174 C O1 | 2.39      |
| 925611 | AC1-036 C    | 0.12      |
| 925781 | AC1-054 C O1 | 3.84      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 3.05      |
| 926021 | AC1-080 C    | 1.02      |
| 926271 | AC1-105 C O1 | 3.87      |
| 926451 | AC1-116 C    | 0.4       |
| 927251 | AC1-221 C    | 1.01      |
| 927261 | AC1-222 C    | 2.36      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931231     | AB1-173 C    | 0.09      |
| 931241     | AB1-173AC    | 0.09      |
| 932511     | AC2-071 C    | 0.58      |
| 932761     | AC2-100 C    | 2.33      |
| 933501     | AC2-165 C    | 14.27     |
| 934201     | AD1-047 C    | 2.71      |
| 934231     | AD1-050 C    | 2.62      |
| 934311     | AD1-055 C    | 1.64      |
| 934341     | AD1-058 C    | 2.53      |
| 934611     | AD1-087 C O1 | 6.64      |
| 934621     | AD1-088 C    | 15.85     |
| 934991     | AD1-131 C    | 0.83      |
| 935171     | AD1-152 C O1 | 6.6       |
| 935221     | AD1-157 C    | 0.25      |
| 935231     | AD1-160 C    | 1.51      |
| 936261     | AD2-033 C    | 13.05     |
| 936331     | AD2-043 C    | 3.06      |
| 936361     | AD2-046 C O1 | 5.59      |
| 936481     | AD2-063 C O1 | 13.31     |
| 937481     | AD2-202 C O1 | 1.83      |
| 937571     | AD2-169 C    | 3.35      |
| 938371     | AE1-056 C    | 8.89      |
| 938551     | AE1-074 C    | 0.78      |
| 938561     | AE1-075 C    | 2.6       |
| 938821     | AE1-108 C O1 | 27.49     |
| 939181     | AE1-148 C O1 | 5.6       |
| 939371     | AE1-168 C    | 18.14     |
| 939841     | AE1-220 C O1 | 8.76      |
| 940241     | AE2-006      | 0.51      |
| 940661     | AE2-053      | 2.08      |
| 941011     | AE2-092 C    | 16.65     |
| 941791     | AE2-182 C    | 2.87      |
| 942371     | AE2-250 C O2 | 3.13      |
| 942451     | AE2-258      | 1.84      |
| 942461     | AE2-259 C O2 | 15.98     |
| 942711     | AE2-287 C O2 | 6.73      |
| 942751     | AE2-291 C O2 | 4.14      |
| 942761     | AE2-292 C O2 | 5.51      |
| 943051     | AE2-328 C    | 17.8      |
| AA2-074    | AA2-074      | 1.72      |
| CARR       | CARR         | 0.27      |
| CBM-S1     | CBM-S1       | 2.57      |
| CBM-S2     | CBM-S2       | 4.56      |
| CBM-W1     | CBM-W1       | 0.86      |
| CBM-W2     | CBM-W2       | 15.04     |
| CIN        | CIN          | 0.47      |
| CPL        | CPL          | 2.52      |
| IPL        | IPL          | 0.27      |
| LGEE       | LGEE         | 0.14      |
| MEC        | MEC          | 1.65      |
| RENSSELAER | RENSSELAER   | 0.21      |
| WEC        | WEC          | 0.12      |



## 14.5.38 Index 38

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME         | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|----------|-------------|--------|-------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090480 | 919140    | AA1-138 TAP | DVP           | 314537  | 6SUFFOLK | DVP         | 1      | DVP_P1-2: LN 2092 | single | 571.52     | 119.25                | 120.46                 | DC    | 6.95      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.07      |
| 314704 | 3LAWRENC     | 0.14      |
| 315126 | 1ROARAP2     | 0.96      |
| 315128 | 1ROARAP4     | 0.92      |
| 315131 | 1EDGECEMA    | 9.42      |
| 315132 | 1EDGECEMB    | 9.42      |
| 315136 | 1ROSEMG1     | 1.68      |
| 315137 | 1ROSEMS1     | 1.04      |
| 315138 | 1ROSEMG2     | 0.79      |
| 315139 | 1GASTONA     | 2.37      |
| 315141 | 1GASTONB     | 2.37      |
| 315159 | 1KERR 2      | 0.53      |
| 315163 | 1KERR 6      | 0.52      |
| 315164 | 1KERR 7      | 0.52      |
| 315292 | 1DOMTR78     | 2.01      |
| 315293 | 1DOMTR9      | 1.64      |
| 315294 | 1DOMTR10     | 2.98      |
| 916041 | Z1-036 C     | 1.64      |
| 917331 | Z2-043 C     | 0.46      |
| 917341 | Z2-044 C     | 0.17      |
| 917511 | Z2-088 C OP1 | 1.67      |
| 918491 | AA1-063AC OP | 1.35      |
| 918511 | AA1-065 C OP | 2.38      |
| 918531 | AA1-067 C    | 0.36      |
| 918561 | AA1-072 C    | 0.07      |
| 919691 | AA2-053 C    | 1.22      |
| 919701 | AA2-057 C    | 7.67      |
| 920041 | AA2-088 C OP | 0.49      |
| 920591 | AA2-165 C    | 0.13      |
| 920671 | AA2-174 C    | 0.06      |
| 920691 | AA2-178 C    | 2.36      |
| 923911 | AB2-031 C O1 | 1.74      |
| 923991 | AB2-040 C O1 | 0.7       |
| 924151 | AB2-059 C O1 | 1.28      |
| 924401 | AB2-089 C    | 1.24      |
| 924491 | AB2-098 C    | 0.99      |
| 924501 | AB2-099 C    | 0.95      |
| 924511 | AB2-100 C    | 7.11      |
| 925121 | AB2-169 C    | 1.5       |
| 925171 | AB2-174 C O1 | 5.2       |
| 925591 | AC1-034 C    | 6.83      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 925781     | AC1-054 C O1 | 4.49      |
| 926071     | AC1-086 C    | 21.84     |
| 926201     | AC1-098 C    | 7.82      |
| 926211     | AC1-099 C    | 2.62      |
| 927021     | AC1-189 C    | 13.69     |
| 927141     | AC1-208 C    | 10.08     |
| 930401     | AB1-081 C O1 | 1.09      |
| 930861     | AB1-132 C O1 | 1.81      |
| 931231     | AB1-173 C    | 0.21      |
| 931241     | AB1-173AC    | 0.21      |
| 932631     | AC2-084 C    | 11.14     |
| 933991     | AD1-023 C    | 27.21     |
| 934201     | AD1-047 C    | 6.24      |
| 934231     | AD1-050 C    | 2.73      |
| 934331     | AD1-057 C O1 | 10.32     |
| 934521     | AD1-076 C    | 110.71    |
| 936401     | AD2-051 C O1 | 15.91     |
| 936531     | AD2-068 C    | 6.55      |
| 936701     | AD2-089 C    | 9.29      |
| 937571     | AD2-169 C    | 8.2       |
| 938171     | AE1-026 C1 O | 58.56     |
| 938172     | AE1-026 C2 O | 8.47      |
| 938221     | AE1-035 C    | 4.88      |
| 938661     | AE1-088      | 6.3       |
| 939071     | AE1-135 C O1 | 11.68     |
| 940491     | AE2-034 C    | 16.91     |
| 940521     | AE2-037 C O2 | 15.57     |
| 940571     | AE2-044 C    | 4.47      |
| 941541     | AE2-151 C    | 1.97      |
| 941951     | AE2-207      | 2.89      |
| 942371     | AE2-250 C O2 | 5.81      |
| 942471     | AE2-260 C O2 | 8.16      |
| 942711     | AE2-287 C O2 | 6.95      |
| 943171     | AE2-346 C    | 2.85      |
| AA2-074    | AA2-074      | 2.73      |
| CARR       | CARR         | 0.19      |
| CBM-S1     | CBM-S1       | 5.98      |
| CBM-S2     | CBM-S2       | 7.05      |
| CBM-W1     | CBM-W1       | 6.2       |
| CBM-W2     | CBM-W2       | 39.24     |
| CIN        | CIN          | 2.78      |
| CPL        | CPL          | 4.02      |
| IPL        | IPL          | 1.74      |
| LGEE       | LGEE         | 0.8       |
| MEC        | MEC          | 6.14      |
| MECS       | MECS         | 2.71      |
| RENSSELAER | RENSSELAER   | 0.15      |
| WEC        | WEC          | 0.75      |

## 14.5.39 Index 39

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS   | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|----------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7720140 | 924510    | AB2-100 TAP | DVP           | 314583  | 6LAKEVEW | DVP         | 1      | DVP_P4-2: 23872 | breaker | 427.0      | 153.72                | 164.03                 | DC    | 44.04     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314572     | 3EMPORIA     | 1.1       |
| 314704     | 3LAWRENC     | 0.55      |
| 923911     | AB2-031 C O1 | 4.0       |
| 923912     | AB2-031 E O1 | 1.97      |
| 923991     | AB2-040 C O1 | 1.6       |
| 923992     | AB2-040 E O1 | 10.75     |
| 924022     | AB2-043 E O1 | 3.03      |
| 924162     | AB2-060 E O1 | 2.47      |
| 924302     | AB2-077 E O1 | 0.75      |
| 924312     | AB2-078 E O1 | 0.75      |
| 924322     | AB2-079 E O1 | 0.75      |
| 924511     | AB2-100 C    | 51.74     |
| 924512     | AB2-100 E    | 25.48     |
| 925171     | AB2-174 C O1 | 14.8      |
| 925172     | AB2-174 E O1 | 13.39     |
| 931231     | AB1-173 C    | 0.49      |
| 931232     | AB1-173 E    | 1.88      |
| 931241     | AB1-173AC    | 0.49      |
| 931242     | AB1-173AE    | 1.88      |
| 934201     | AD1-047 C    | 14.34     |
| 934202     | AD1-047 E    | 9.56      |
| 936261     | AD2-033 C    | 6.32      |
| 936262     | AD2-033 E    | 4.21      |
| 936481     | AD2-063 C O1 | 8.08      |
| 936482     | AD2-063 E O1 | 5.39      |
| 937571     | AD2-169 C    | 14.41     |
| 937572     | AD2-169 E    | 9.61      |
| 939071     | AE1-135 C O1 | 90.68     |
| 939072     | AE1-135 E O1 | 60.45     |
| 940481     | AE2-033 C    | 67.26     |
| 940482     | AE2-033 E    | 45.34     |
| 942371     | AE2-250 C O2 | 26.69     |
| 942372     | AE2-250 E O2 | 14.09     |
| 942451     | AE2-258      | 1.38      |
| 942471     | AE2-260 C O2 | 62.7      |
| 942472     | AE2-260 E O2 | 88.93     |
| 942711     | AE2-287 C O2 | 26.42     |
| 942712     | AE2-287 E O2 | 17.62     |
| BLUEG      | BLUEG        | 0.16      |
| CALDERWOOD | CALDERWOOD   | 0.06      |
| CANNELTON  | CANNELTON    | 0.01      |
| CARR       | CARR         | 0.0       |

| <b>Bus #</b> | <b>Bus</b> | <b>MW Impact</b> |
|--------------|------------|------------------|
| CATAWBA      | CATAWBA    | 0.07             |
| CHEOAH       | CHEOAH     | 0.06             |
| CHILHOWEE    | CHILHOWEE  | 0.02             |
| COFFEEN      | COFFEEN    | 0.02             |
| COTTONWOOD   | COTTONWOOD | 0.2              |
| DUCKCREEK    | DUCKCREEK  | 0.04             |
| EDWARDS      | EDWARDS    | 0.02             |
| ELMERSMITH   | ELMERSMITH | 0.02             |
| FARMERCITY   | FARMERCITY | 0.02             |
| G-007        | G-007      | 0.0              |
| GIBSON       | GIBSON     | 0.01             |
| HAMLET       | HAMLET     | 0.19             |
| NEWTON       | NEWTON     | 0.06             |
| O-066        | O-066      | 0.01             |
| PRAIRIE      | PRAIRIE    | 0.14             |
| RENSSELAER   | RENSSELAER | 0.0              |
| SANTEETLA    | SANTEETLA  | 0.02             |
| SMITHLAND    | SMITHLAND  | 0.01             |
| TATANKA      | TATANKA    | 0.03             |
| TILTON       | TILTON     | 0.02             |
| TRIMBLE      | TRIMBLE    | 0.02             |
| TVA          | TVA        | 0.16             |
| UNIONPOWER   | UNIONPOWER | 0.09             |

#### 14.5.40 Index 40

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS       | TO BUS AREA | CKT ID | CONT NAME        | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|--------------|-------------|--------|------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090748 | 927250    | AC1-221 TAP | DVP           | 304070  | 6PERSON230 T | CPL         | 1      | DVP_P1-2: LN 556 | single | 718.0      | 119.54                | 120.57                 | DC    | 8.85      |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314429 | 3JTRSVLE     | 0.4       |
| 314704 | 3LAWRENC     | 0.14      |
| 315150 | 1BUGGS 1     | 17.2      |
| 315151 | 1BUGGS 2     | 17.2      |
| 315153 | 1CLOVER1     | 27.86     |
| 315154 | 1CLOVER2     | 27.5      |
| 315156 | 1HALLBR1     | 0.91      |
| 315158 | 1KERR 1      | 0.22      |
| 315159 | 1KERR 2      | 0.91      |
| 315160 | 1KERR 3      | 0.89      |
| 315161 | 1KERR 4      | 0.89      |
| 315162 | 1KERR 5      | 0.89      |
| 315163 | 1KERR 6      | 0.89      |
| 315164 | 1KERR 7      | 0.89      |
| 315165 | 1HURT 1      | 5.15      |
| 315166 | 1HURT 2      | 5.15      |
| 315171 | 1BREMO 4     | 13.53     |
| 315191 | 1BEARGRDN G1 | 2.03      |
| 315192 | 1BEARGRDN G2 | 2.03      |
| 315193 | 1BEARGRDN S1 | 4.17      |
| 315266 | 1PLYWOOD A   | 2.35      |
| 920291 | AA2-127      | 0.42      |
| 924021 | AB2-043 C O1 | 0.52      |
| 924031 | AB2-045 C    | 0.3       |
| 924161 | AB2-060 C O1 | 1.49      |
| 924301 | AB2-077 C O1 | 0.33      |
| 924311 | AB2-078 C O1 | 0.33      |
| 924321 | AB2-079 C O1 | 0.33      |
| 924401 | AB2-089 C    | 1.61      |
| 925611 | AC1-036 C    | 0.16      |
| 925661 | AC1-042 C    | 1.59      |
| 925781 | AC1-054 C O1 | 4.97      |
| 925831 | AC1-062      | 0.05      |
| 925991 | AC1-075 C    | 11.92     |
| 926021 | AC1-080 C    | 3.98      |
| 926271 | AC1-105 C O1 | 14.49     |
| 926641 | AC1-145 C    | 1.9       |
| 927251 | AC1-221 C    | 11.73     |
| 927261 | AC1-222 C    | 10.12     |
| 932511 | AC2-071 C    | 0.3       |
| 932761 | AC2-100 C    | 26.98     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 934231     | AD1-050 C    | 3.55      |
| 934311     | AD1-055 C    | 7.02      |
| 934341     | AD1-058 C    | 29.39     |
| 934611     | AD1-087 C O1 | 26.93     |
| 934621     | AD1-088 C    | 31.81     |
| 934991     | AD1-131 C    | 9.64      |
| 935171     | AD1-152 C O1 | 26.76     |
| 935221     | AD1-157 C    | 0.26      |
| 935231     | AD1-160 C    | 1.55      |
| 936261     | AD2-033 C    | 17.8      |
| 936331     | AD2-043 C    | 13.11     |
| 936361     | AD2-046 C O1 | 8.37      |
| 936481     | AD2-063 C O1 | 20.34     |
| 937481     | AD2-202 C O1 | 7.42      |
| 938371     | AE1-056 C    | 9.12      |
| 939181     | AE1-148 C O1 | 8.48      |
| 939371     | AE1-168 C    | 20.88     |
| 939941     | AE1-230 C1   | 0.72      |
| 940241     | AE2-006      | 0.66      |
| 940661     | AE2-053      | 3.15      |
| 941791     | AE2-182 C    | 5.75      |
| 941801     | AE2-185 C    | 4.49      |
| 941821     | AE2-187 C    | 4.49      |
| 942331     | AE2-246      | 1.39      |
| 942451     | AE2-258      | 3.16      |
| 942461     | AE2-259 C O2 | 14.35     |
| 942671     | AE2-283 C    | 3.95      |
| 942711     | AE2-287 C O2 | 8.85      |
| 942751     | AE2-291 C O2 | 14.91     |
| 942761     | AE2-292 C O2 | 20.56     |
| 943051     | AE2-328 C    | 22.49     |
| AC1-131    | AC1-131      | 5.19      |
| BLUEG      | BLUEG        | 6.75      |
| CALDERWOOD | CALDERWOOD   | 1.59      |
| CANNELTON  | CANNELTON    | 0.47      |
| CATAWBA    | CATAWBA      | 1.7       |
| CBM-N      | CBM-N        | 0.03      |
| CHEOAH     | CHEOAH       | 1.49      |
| CHILHOWEE  | CHILHOWEE    | 0.51      |
| COFFEEN    | COFFEEN      | 0.82      |
| COTTONWOOD | COTTONWOOD   | 5.18      |
| DUCKCREEK  | DUCKCREEK    | 1.66      |
| EDWARDS    | EDWARDS      | 0.74      |
| ELMERSMITH | ELMERSMITH   | 0.84      |
| FARMERCITY | FARMERCITY   | 0.6       |
| G-007A     | G-007A       | 0.3       |
| GIBSON     | GIBSON       | 0.3       |
| HAMLET     | HAMLET       | 3.18      |
| NEWTON     | NEWTON       | 2.12      |
| NYISO      | NYISO        | 0.11      |
| PRAIRIE    | PRAIRIE      | 4.55      |
| SANTEETLA  | SANTEETLA    | 0.44      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>SMITHLAND</b>  | SMITHLAND  | 0.41             |
| <b>TATANKA</b>    | TATANKA    | 1.01             |
| <b>TILTON</b>     | TILTON     | 0.86             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.74             |
| <b>TVA</b>        | TVA        | 4.33             |
| <b>UNIONPOWER</b> | UNIONPOWER | 2.22             |
| <b>VFT</b>        | VFT        | 0.79             |

#### 14.5.41 Index 41

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS    | TO BUS AREA | CKT ID | CONT NAME          | Type   | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|-----------|-------------|--------|--------------------|--------|------------|-----------------------|------------------------|-------|-----------|
| 8090610 | 934330    | AD1-057 TAP | DVP           | 313845  | 6HATHAWAY | DVP         | 1      | DVP_P1-2: LN 238-B | single | 441.8      | 135.92                | 139.23                 | DC    | 14.61     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314589 | 3MURPHYS     | 0.04      |
| 314704 | 3LAWRENC     | 0.3       |
| 315115 | 1S HAMPT1    | 0.59      |
| 315126 | 1ROARAP2     | 1.2       |
| 315128 | 1ROARAP4     | 1.15      |
| 315136 | 1ROSEMG1     | 3.99      |
| 315137 | 1ROSEMS1     | 2.47      |
| 315138 | 1ROSEMG2     | 1.87      |
| 315139 | 1GASTONA     | 4.78      |
| 315141 | 1GASTONB     | 4.78      |
| 315150 | 1BUGGS 1     | 4.52      |
| 315151 | 1BUGGS 2     | 4.52      |
| 315158 | 1KERR 1      | 0.13      |
| 315159 | 1KERR 2      | 0.55      |
| 315160 | 1KERR 3      | 0.54      |
| 315161 | 1KERR 4      | 0.54      |
| 315162 | 1KERR 5      | 0.54      |
| 315163 | 1KERR 6      | 0.54      |
| 315164 | 1KERR 7      | 0.54      |
| 917331 | Z2-043 C     | 0.12      |
| 918491 | AA1-063AC OP | 0.96      |
| 918511 | AA1-065 C OP | 0.52      |
| 918561 | AA1-072 C    | 0.02      |
| 919691 | AA2-053 C    | 1.11      |
| 920041 | AA2-088 C OP | 0.54      |
| 920671 | AA2-174 C    | 0.05      |
| 923801 | AB2-015 C O1 | 4.25      |
| 923911 | AB2-031 C O1 | 3.11      |
| 923991 | AB2-040 C O1 | 1.24      |
| 924021 | AB2-043 C O1 | 0.18      |
| 924161 | AB2-060 C O1 | 0.5       |
| 924301 | AB2-077 C O1 | 0.11      |
| 924311 | AB2-078 C O1 | 0.11      |
| 924321 | AB2-079 C O1 | 0.11      |
| 924401 | AB2-089 C    | 1.36      |
| 924501 | AB2-099 C    | 0.33      |
| 924511 | AB2-100 C    | 21.77     |
| 925171 | AB2-174 C O1 | 10.05     |
| 925611 | AC1-036 C    | 0.04      |
| 925781 | AC1-054 C O1 | 5.04      |
| 926071 | AC1-086 C    | 44.1      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 930861     | AB1-132 C O1 | 3.65      |
| 931231     | AB1-173 C    | 0.38      |
| 931241     | AB1-173AC    | 0.38      |
| 933991     | AD1-023 C    | 4.49      |
| 934201     | AD1-047 C    | 11.13     |
| 934231     | AD1-050 C    | 3.0       |
| 934331     | AD1-057 C O1 | 37.55     |
| 934521     | AD1-076 C    | 16.11     |
| 936261     | AD2-033 C    | 5.0       |
| 936361     | AD2-046 C O1 | 4.59      |
| 936401     | AD2-051 C O1 | 4.71      |
| 936481     | AD2-063 C O1 | 6.38      |
| 936711     | AD2-090 C O1 | 4.16      |
| 937571     | AD2-169 C    | 13.44     |
| 938171     | AE1-026 C1 O | 10.29     |
| 938172     | AE1-026 C2 O | 1.49      |
| 938221     | AE1-035 C    | 1.06      |
| 938771     | AE1-103 C O1 | 1.63      |
| 939071     | AE1-135 C O1 | 38.52     |
| 939181     | AE1-148 C O1 | 4.5       |
| 939371     | AE1-168 C    | 4.69      |
| 940241     | AE2-006      | 0.18      |
| 940481     | AE2-033 C    | 28.57     |
| 940661     | AE2-053      | 1.68      |
| 941541     | AE2-151 C    | 0.58      |
| 942371     | AE2-250 C O2 | 13.96     |
| 942451     | AE2-258      | 1.09      |
| 942471     | AE2-260 C O2 | 26.59     |
| 942711     | AE2-287 C O2 | 14.61     |
| 943171     | AE2-346 C    | 1.0       |
| BLUEG      | BLUEG        | 3.44      |
| CALDERWOOD | CALDERWOOD   | 0.68      |
| CANNELTON  | CANNELTON    | 0.23      |
| CARR       | CARR         | 0.0       |
| CATAWBA    | CATAWBA      | 0.66      |
| CHEOAH     | CHEOAH       | 0.64      |
| CHILHOWEE  | CHILHOWEE    | 0.22      |
| COFFEEN    | COFFEEN      | 0.4       |
| COTTONWOOD | COTTONWOOD   | 2.3       |
| DUCKCREEK  | DUCKCREEK    | 0.82      |
| EDWARDS    | EDWARDS      | 0.37      |
| ELMERSMITH | ELMERSMITH   | 0.41      |
| FARMERCITY | FARMERCITY   | 0.29      |
| G-007A     | G-007A       | 0.11      |
| GIBSON     | GIBSON       | 0.15      |
| HAMLET     | HAMLET       | 1.33      |
| NEWTON     | NEWTON       | 1.04      |
| PRAIRIE    | PRAIRIE      | 2.16      |
| RENSSELAER | RENSSELAER   | 0.0       |
| SANTEETLA  | SANTEETLA    | 0.19      |
| SMITHLAND  | SMITHLAND    | 0.19      |
| TATANKA    | TATANKA      | 0.49      |

| <b>Bus #</b>      | <b>Bus</b> | <b>MW Impact</b> |
|-------------------|------------|------------------|
| <b>TILTON</b>     | TILTON     | 0.44             |
| <b>TRIMBLE</b>    | TRIMBLE    | 0.38             |
| <b>TVA</b>        | TVA        | 1.93             |
| <b>UNIONPOWER</b> | UNIONPOWER | 0.95             |
| <b>VFT</b>        | VFT        | 0.27             |

## 14.5.42 Index 42

| ID      | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS  | TO BUS AREA | CKT ID | CONT NAME             | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|---------|-----------|-------------|---------------|---------|---------|-------------|--------|-----------------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 7719986 | 940480    | AE2-033 TAP | DVP           | 314435  | 6SAPONY | DVP         | 1      | DVP_P4-2:<br>239T2141 | breaker | 637.0      | 187.99                | 195.77                 | DC    | 49.71     |

| Bus #  | Bus          | MW Impact |
|--------|--------------|-----------|
| 314572 | 3EMPORIA     | 1.24      |
| 314578 | 3HORNRTN     | 3.01      |
| 314704 | 3LAWRENC     | 0.62      |
| 315126 | 1ROARAP2     | 0.97      |
| 315128 | 1ROARAP4     | 0.94      |
| 315139 | 1GASTONA     | 10.52     |
| 315141 | 1GASTONB     | 10.52     |
| 918491 | AA1-063AC OP | 0.77      |
| 918492 | AA1-063AE OP | 2.96      |
| 919691 | AA2-053 C    | 0.9       |
| 919692 | AA2-053 E    | 3.15      |
| 920671 | AA2-174 C    | 0.04      |
| 920672 | AA2-174 E    | 0.36      |
| 923911 | AB2-031 C O1 | 5.04      |
| 923912 | AB2-031 E O1 | 2.48      |
| 923991 | AB2-040 C O1 | 2.02      |
| 923992 | AB2-040 E O1 | 13.53     |
| 924021 | AB2-043 C O1 | 0.3       |
| 924022 | AB2-043 E O1 | 4.06      |
| 924161 | AB2-060 C O1 | 0.86      |
| 924162 | AB2-060 E O1 | 3.3       |
| 924301 | AB2-077 C O1 | 0.19      |
| 924302 | AB2-077 E O1 | 1.02      |
| 924311 | AB2-078 C O1 | 0.19      |
| 924312 | AB2-078 E O1 | 1.02      |
| 924321 | AB2-079 C O1 | 0.19      |
| 924322 | AB2-079 E O1 | 1.02      |
| 924401 | AB2-089 C    | 1.6       |
| 924402 | AB2-089 E    | 0.83      |
| 924511 | AB2-100 C    | 52.6      |
| 924512 | AB2-100 E    | 25.91     |
| 925171 | AB2-174 C O1 | 17.74     |
| 925172 | AB2-174 E O1 | 16.05     |
| 925781 | AC1-054 C O1 | 5.59      |
| 925782 | AC1-054 E O1 | 2.58      |
| 926071 | AC1-086 C    | 97.12     |
| 926072 | AC1-086 E    | 44.2      |
| 930861 | AB1-132 C O1 | 8.04      |
| 930862 | AB1-132 E O1 | 28.26     |
| 931231 | AB1-173 C    | 0.62      |
| 931232 | AB1-173 E    | 2.37      |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 931241     | AB1-173AC    | 0.62      |
| 931242     | AB1-173AE    | 2.37      |
| 934201     | AD1-047 C    | 18.04     |
| 934202     | AD1-047 E    | 12.03     |
| 934231     | AD1-050 C    | 3.53      |
| 934232     | AD1-050 E    | 1.93      |
| 936361     | AD2-046 C O1 | 6.38      |
| 936362     | AD2-046 E O1 | 2.93      |
| 936481     | AD2-063 C O1 | 10.79     |
| 936482     | AD2-063 E O1 | 7.19      |
| 937571     | AD2-169 C    | 19.53     |
| 937572     | AD2-169 E    | 13.02     |
| 939071     | AE1-135 C O1 | 94.21     |
| 939072     | AE1-135 E O1 | 62.81     |
| 939181     | AE1-148 C O1 | 6.33      |
| 939182     | AE1-148 E O1 | 4.22      |
| 940481     | AE2-033 C    | 76.89     |
| 940482     | AE2-033 E    | 51.84     |
| 940661     | AE2-053      | 2.36      |
| 942371     | AE2-250 C O2 | 29.4      |
| 942372     | AE2-250 E O2 | 15.52     |
| 942451     | AE2-258      | 1.85      |
| 942471     | AE2-260 C O2 | 64.93     |
| 942472     | AE2-260 E O2 | 92.09     |
| 942711     | AE2-287 C O2 | 29.82     |
| 942712     | AE2-287 E O2 | 19.88     |
| CARR       | CARR         | 0.13      |
| CBM-S1     | CBM-S1       | 1.42      |
| CBM-S2     | CBM-S2       | 1.84      |
| CBM-W1     | CBM-W1       | 1.17      |
| CBM-W2     | CBM-W2       | 8.98      |
| CIN        | CIN          | 0.55      |
| CPL        | CPL          | 1.02      |
| G-007      | G-007        | 0.43      |
| IPL        | IPL          | 0.34      |
| LGEE       | LGEE         | 0.16      |
| MEC        | MEC          | 1.3       |
| MECS       | MECS         | 0.38      |
| O-066      | O-066        | 2.72      |
| RENSSELAER | RENSSELAER   | 0.1       |
| WEC        | WEC          | 0.15      |

#### 14.5.43 Index 43

| ID       | FROM BUS# | FROM BUS    | FROM BUS AREA | TO BUS# | TO BUS      | TO BUS AREA | CKT ID | CONT NAME       | Type    | Rating MVA | PRE PROJECT LOADING % | POST PROJECT LOADING % | AC DC | MW IMPACT |
|----------|-----------|-------------|---------------|---------|-------------|-------------|--------|-----------------|---------|------------|-----------------------|------------------------|-------|-----------|
| 12453634 | 942470    | AE2-260 TAP | DVP           | 924510  | AB2-100 TAP | DVP         | 1      | DVP_P4-2: 23872 | breaker | 427.0      | 135.74                | 146.05                 | DC    | 44.04     |

| Bus #      | Bus          | MW Impact |
|------------|--------------|-----------|
| 314572     | 3EMPORIA     | 1.1       |
| 314704     | 3LAWRENC     | 0.55      |
| 923911     | AB2-031 C O1 | 4.0       |
| 923912     | AB2-031 E O1 | 1.97      |
| 923991     | AB2-040 C O1 | 1.6       |
| 923992     | AB2-040 E O1 | 10.75     |
| 924022     | AB2-043 E O1 | 3.03      |
| 924162     | AB2-060 E O1 | 2.47      |
| 924302     | AB2-077 E O1 | 0.75      |
| 924312     | AB2-078 E O1 | 0.75      |
| 924322     | AB2-079 E O1 | 0.75      |
| 925171     | AB2-174 C O1 | 14.8      |
| 925172     | AB2-174 E O1 | 13.39     |
| 925612     | AC1-036 E    | 0.4       |
| 931231     | AB1-173 C    | 0.49      |
| 931232     | AB1-173 E    | 1.88      |
| 931241     | AB1-173AC    | 0.49      |
| 931242     | AB1-173AE    | 1.88      |
| 934201     | AD1-047 C    | 14.34     |
| 934202     | AD1-047 E    | 9.56      |
| 936261     | AD2-033 C    | 6.32      |
| 936262     | AD2-033 E    | 4.21      |
| 936481     | AD2-063 C O1 | 8.08      |
| 936482     | AD2-063 E O1 | 5.39      |
| 937571     | AD2-169 C    | 14.41     |
| 937572     | AD2-169 E    | 9.61      |
| 939071     | AE1-135 C O1 | 90.68     |
| 939072     | AE1-135 E O1 | 60.45     |
| 940241     | AE2-006      | 0.22      |
| 940481     | AE2-033 C    | 67.26     |
| 940482     | AE2-033 E    | 45.34     |
| 942371     | AE2-250 C O2 | 26.69     |
| 942372     | AE2-250 E O2 | 14.09     |
| 942451     | AE2-258      | 1.38      |
| 942471     | AE2-260 C O2 | 62.7      |
| 942472     | AE2-260 E O2 | 88.93     |
| 942711     | AE2-287 C O2 | 26.42     |
| 942712     | AE2-287 E O2 | 17.62     |
| BLUEG      | BLUEG        | 0.16      |
| CALDERWOOD | CALDERWOOD   | 0.06      |
| CANNELTON  | CANNELTON    | 0.01      |
| CARR       | CARR         | 0.0       |

| <b>Bus #</b> | <b>Bus</b> | <b>MW Impact</b> |
|--------------|------------|------------------|
| CATAWBA      | CATAWBA    | 0.07             |
| CHEOAH       | CHEOAH     | 0.06             |
| CHILHOWEE    | CHILHOWEE  | 0.02             |
| COFFEEN      | COFFEEN    | 0.02             |
| COTTONWOOD   | COTTONWOOD | 0.2              |
| DUCKCREEK    | DUCKCREEK  | 0.04             |
| EDWARDS      | EDWARDS    | 0.02             |
| ELMERSMITH   | ELMERSMITH | 0.02             |
| FARMERCITY   | FARMERCITY | 0.02             |
| G-007        | G-007      | 0.0              |
| GIBSON       | GIBSON     | 0.01             |
| HAMLET       | HAMLET     | 0.19             |
| NEWTON       | NEWTON     | 0.06             |
| O-066        | O-066      | 0.01             |
| PRAIRIE      | PRAIRIE    | 0.14             |
| RENSSELAER   | RENSSELAER | 0.0              |
| SANTEETLA    | SANTEETLA  | 0.02             |
| SMITHLAND    | SMITHLAND  | 0.01             |
| TATANKA      | TATANKA    | 0.03             |
| TILTON       | TILTON     | 0.02             |
| TRIMBLE      | TRIMBLE    | 0.02             |
| TVA          | TVA        | 0.16             |
| UNIONPOWER   | UNIONPOWER | 0.09             |

## Affected Systems

## 14.6 Affected Systems

### 14.6.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

### 14.6.2 MISO

MISO Impacts to be determined during later study phases (as applicable).

### 14.6.3 TVA

TVA Impacts to be determined during later study phases (as applicable).

### 14.6.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

### 14.6.5 NYISO

NYISO Impacts to be determined during later study phases (as applicable).

## 14.7 Contingency Descriptions

| Contingency Name               | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P1-2: LN 563</b>        | CONTINGENCY 'DVP_P1-2: LN 563'<br>OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>DVP_P1-3: 6CAROLNA-TX#4</b> | CONTINGENCY 'DVP_P1-3: 6CAROLNA-TX#4'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>DVP_P1-2: LN 2092</b>       | CONTINGENCY 'DVP_P1-2: LN 2092'<br>OPEN BRANCH FROM BUS 313714 TO BUS 314662 CKT 1 /* 6PERQUIMANS 230.00 - 6S HERTFORD 230.00<br>OPEN BRANCH FROM BUS 314651 TO BUS 314662 CKT 1 /* 6WINFALL 230.00 - 6S HERTFORD 230.00<br>OPEN BUS 314662 /* ISLAND: 6S HERTFORD 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>DVP_P7-1: LN 22-90-A</b>    | CONTINGENCY 'DVP_P7-1: LN 22-90-A'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00<br>OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00<br>OPEN BUS 314571 /* ISLAND: 3EATON F 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00<br>OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00<br>OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00<br>OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00<br>OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00<br>END |
| <b>DVP_P4-2: 562T563</b>       | CONTINGENCY 'DVP_P4-2: 562T563' /* CARSON 500 KV<br>OPEN BRANCH FROM BUS 314902 TO BUS 941030 CKT 1 /* 8CARSON 500.00 - AE2-094 TAP 500.00 /* CONTINGENCY LINE ADDED FOR AE2 BUILD<br>OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>DVP_P1-2: LN 130-A</b>      | CONTINGENCY 'DVP_P1-2: LN 130-A'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314595 TO BUS 314600 CKT 1 /* 3PL HILL 115.00 - 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314600 TO BUS 937570 CKT 1 /* 3PLHITP 115.00 - AD2-169 TAP 115.00<br>OPEN BUS 314595 /* ISLAND: 3PL HILL 115.00<br>OPEN BUS 314600 /* ISLAND: 3PLHITP 115.00<br>END                                                                                                                                                                                                                                                                                                                                                                                       |

| Contingency Name       | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P1-2: LN 91-B      | CONTINGENCY 'DVP_P1-2: LN 91-B'<br>OPEN BRANCH FROM BUS 941010 TO BUS 314774 CKT 1      /* AE2-092 TAP 115.00 - 3SHERWOD<br>115.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                |
| DVP_P1-2: LN 235-A-A   | CONTINGENCY 'DVP_P1-2: LN 235-A-A'<br>OPEN BRANCH FROM BUS 313802 TO BUS 314268 CKT 1      /* 6PRINCE EDW 230.00 - 6BRIERY<br>230.00<br>OPEN BRANCH FROM BUS 313802 TO BUS 314692 CKT 1      /* 6PRINCE EDW 230.00 - 6FARMVIL<br>230.00<br>OPEN BRANCH FROM BUS 314268 TO BUS 943050 CKT 1      /* 6BRIERY 230.00 - AE2-328 TAP<br>230.00<br>OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1      /* 3FARMVIL 115.00 - 6FARMVIL<br>230.00<br>OPEN BUS 313802      /* ISLAND: 6PRINCE EDW 230.00<br>OPEN BUS 314268      /* ISLAND: 6BRIERY 230.00<br>END |
| DVP_P1-2: LN 33-B      | CONTINGENCY 'DVP_P1-2: LN 33-B'<br>OPEN BRANCH FROM BUS 926270 TO BUS 314696 CKT 1      /* AC1-105 TAP 115.00 - 3SEEDGE HILL<br>115.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                            |
| DVP_P7-1: LN 2058-2181 | CONTINGENCY 'DVP_P7-1: LN 2058-2181'<br>OPEN BRANCH FROM BUS 304222 TO BUS 313845 CKT 1      /* 6ROCKYMT230T230.00 -<br>6HATHAWAY 230.00<br>OPEN BUS 304226      /* ISLAND: 6PA-RMOUNT#4115.00<br>OPEN BRANCH FROM BUS 304226 TO BUS 314591 CKT 1      /* 6PA-RMOUNT#4230.00 - 6NASH<br>230.00<br>OPEN BRANCH FROM BUS 313845 TO BUS 314591 CKT 1      /* 6HATHAWAY 230.00 - 6NASH 230.00<br>OPEN BUS 314591      /* ISLAND: 6NASH 230.00<br>END                                                                                                         |
| DVP_P1-2: LN 296-B     | CONTINGENCY 'DVP_P1-2: LN 296-B'<br>OPEN BRANCH FROM BUS 927250 TO BUS 314697 CKT 1      /* AC1-221 TAP T230.00 - 6SEEDGE HILL<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                          |
| DVP_P7-1: LN 56-2060   | CONTINGENCY 'DVP_P7-1: LN 56-2060'<br>OPEN BRANCH FROM BUS 314259 TO BUS 314604 CKT 1      /* 3CAROL56_1 115.00 - 3SEABORD<br>115.00<br>OPEN BRANCH FROM BUS 314558 TO BUS 314587 CKT 1      /* 3BOYKINS 115.00 - 3MARGTSV<br>115.00<br>OPEN BRANCH FROM BUS 314587 TO BUS 314604 CKT 1      /* 3MARGTSV 115.00 - 3SEABORD<br>115.00<br>OPEN BUS 314587      /* ISLAND: 3MARGTSV 115.00<br>OPEN BUS 314604      /* ISLAND: 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314561 TO BUS 314599 CKT 1      /* 6CAROLNA 230.00 - 6ROA VAL<br>230.00<br>END        |

| Contingency Name                  | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P4-2: 201262</b>           | CONTINGENCY 'DVP_P4-2: 201262' /* EARLEYS 230 KV<br>OPEN BRANCH FROM BUS 314266 TO BUS 314569 CKT 1 /* 6NORTHAMPTON230.00 - 6EARLEYS 230.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314599 CKT 1 /* 6NORTHAMPTON230.00 - 6ROA VAL 230.00<br>OPEN BUS 314266 /* ISLAND: 6NORTHAMPTON230.00<br>OPEN BRANCH FROM BUS 314568 TO BUS 314569 CKT 1 /* 3EARLEYS 115.00 - 6EARLEYS 230.00<br>END                                                                                                                  |
| <b>DVP_P1-2: LN 1001</b>          | CONTINGENCY 'DVP_P1-2: LN 1001'<br>OPEN BRANCH FROM BUS 313719 TO BUS 314623 CKT 1 /* 3CHESTNUT 115.00 - 3WITAKRS 115.00<br>OPEN BRANCH FROM BUS 313854 TO BUS 314554 CKT 1 /* 3CONSLDL 115.00 - 3BTLEBRO 115.00<br>OPEN BRANCH FROM BUS 313854 TO BUS 314623 CKT 1 /* 3CONSLDL 115.00 - 3WITAKRS 115.00<br>OPEN BUS 313854 /* ISLAND: 3CONSLDL 115.00<br>OPEN BUS 314623 /* ISLAND: 3WITAKRS 115.00<br>OPEN BUS 917341 /* ISLAND: Z2-044 C 115.00<br>OPEN BUS 917342 /* ISLAND: Z2-044 E 115.00<br>END |
| <b>DVP_P1-2: LN 22-A</b>          | CONTINGENCY 'DVP_P1-2: LN 22-A'<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F 115.00<br>OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP 115.00<br>OPEN BUS 314571 /* ISLAND: 3EATON F 115.00<br>END                                                                                                                                                                                                                                 |
| <b>DVP_P1-2: LN 45</b>            | CONTINGENCY 'DVP_P1-2: LN 45'<br>OPEN BUS 304099 /* ISLAND: 3WARREN TAP 115.00<br>OPEN BUS 304100 /* ISLAND: 3HEND                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>DVP_P1-3: 6SEDGE HILL-TX#1</b> | CONTINGENCY 'DVP_P1-3: 6SEDGE HILL-TX#1'<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 1 /* 3SEDGE HILL 115.00 - 6SEDGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                           |
| <b>DVP_P1-3: 6SEDGE HILL-TX#2</b> | CONTINGENCY 'DVP_P1-3: 6SEDGE HILL-TX#2'<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEDGE HILL 115.00 - 6SEDGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                           |
| <b>DVP_P4-2: H1T2068</b>          | CONTINGENCY 'DVP_P4-2: H1T2068' /* SEDGE HILL 230 KV<br>OPEN BRANCH FROM BUS 934610 TO BUS 314697 CKT 1 /* AD1-087 TAP 230.00 - 6SEDGE HILL 230.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 1 /* 3SEDGE HILL 115.00 - 6SEDGE HILL 230.00<br>END                                                                                                                                                                                                         |

| Contingency Name      | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P1-2: LN 238-B    | CONTINGENCY 'DVP_P1-2: LN 238-B'<br>OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 - 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314435 TO BUS 940480 CKT 1 /* 6SAPONY 230.00 - AE2-033 TAP<br>230.00<br>OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DVP_P4-2: 2202        | CONTINGENCY 'DVP_P4-2: 2202' /* CAROLINA 115 KV<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F<br>115.00<br>OPEN BRANCH FROM BUS 314571 TO BUS 925780 CKT 1 /* 3EATON F 115.00 - AC1-054 TAP<br>115.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BUS 314571 /* ISLAND: 3EATON F 115.00<br>OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA<br>115.00<br>OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA<br>115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA<br>230.00<br>END |
| DVP_P1-2: LN 570      | CONTINGENCY 'DVP_P1-2: LN 570'<br>OPEN BRANCH FROM BUS 304183 TO BUS 918500 CKT 1 /* 8WAKE 500 TT500.00 - AA1-064 TAP<br>500.00<br>OPEN BRANCH FROM BUS 314935 TO BUS 918500 CKT 1 /* 8HERITAGE 500.00 - AA1-064 TAP<br>500.00<br>OPEN BUS 918500 /* ISLAND: AA1-064 TAP 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DVP_P4-2: 511T591     | CONTINGENCY 'DVP_P4-2: 511T591' /* RAWLINGS 500 KV<br>OPEN BRANCH FROM BUS 940470 TO BUS 314936 CKT 1 /* AE2-031 TAP 500.00 - 8RAWLINGS<br>500.00<br>OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS<br>500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| DVP_P4-2: 205602      | CONTINGENCY 'DVP_P4-2: 205602' /* HATHAWAY 230 KV<br>OPEN BRANCH FROM BUS 313845 TO BUS 934330 CKT 1 /* 6HATHAWAY 230.00 - AD1-057 TAP<br>230.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 313844 TO BUS 313845 CKT 1 /* 3HATHAWAY 115.00 - 6HATHAWAY<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                        |
| DVP_P1-2: LN 6002_FSA | CONTINGENCY 'DVP_P1-2: LN 6002_FSA'<br>OPEN BRANCH FROM BUS 314935 TO BUS 918500 CKT 1 /* 8HERITAGE 500.00 - AA1-064 TAP<br>500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DVP_P1-2: LN 2056-A   | CONTINGENCY 'DVP_P1-2: LN 2056-A'<br>OPEN BRANCH FROM BUS 313845 TO BUS 934330 CKT 1 /* 6HATHAWAY 230.00 - AD1-057 TAP<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Contingency Name       | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P1-2: LN 2056-B    | CONTINGENCY 'DVP_P1-2: LN 2056-B'<br>OPEN BRANCH FROM BUS 934330 TO BUS 314579 CKT 1 /* AD1-057 TAP 230.00 - 6HORNRTN<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DVP_P4-6: CAROLIN T122 | CONTINGENCY 'DVP_P4-6: CAROLIN T122' /* CAROLINA 115 KV<br>OPEN BRANCH FROM BUS 314559 TO BUS 315126 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP2<br>14.400<br>OPEN BRANCH FROM BUS 314559 TO BUS 315128 CKT 1 /* 3CAROLNA 115.00 - 1ROARAP4<br>14.400<br>OPEN BUS 315126 /* ISLAND: 1ROARAP2 14.400<br>OPEN BUS 315128 /* ISLAND: 1ROARAP4 14.400<br>OPEN BRANCH FROM BUS 314559 TO BUS 314571 CKT 1 /* 3CAROLNA 115.00 - 3EATON F<br>115.00<br>OPEN BRANCH FROM BUS 313722 TO BUS 314559 CKT 1 /* 3OCCONEECHEE115.00 - 3CAROLNA<br>115.00<br>OPEN BRANCH FROM BUS 314259 TO BUS 314559 CKT Z1 /* 3CAROL56_1 115.00 - 3CAROLNA<br>115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314578 CKT 1 /* 3CAROLNA 115.00 - 3HORNRTN<br>115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN<br>115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314600 CKT 1 /* 3CAROLNA 115.00 - 3PLHITP 115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314561 CKT 1 /* 3CAROLNA 115.00 - 6CAROLNA<br>230.00<br>OPEN BUS 314559 /* 3CAROLNA 115.00 KV<br>END |
| DVP_P1-2: LN 557       | CONTINGENCY 'DVP_P1-2: LN 557'<br>OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM<br>500.00<br>OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT<br>500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| DVP_P1-2: LN 556       | CONTINGENCY 'DVP_P1-2: LN 556'<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS<br>500.00<br>OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00<br>OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| DVP_P1-2: LN 296-A     | CONTINGENCY 'DVP_P1-2: LN 296-A'<br>OPEN BRANCH FROM BUS 304070 TO BUS 927250 CKT 1 /* 6PERSON230 T230.00 - AC1-221 TAP<br>230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Contingency Name     | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DVP_P1-2: LN 217     | CONTINGENCY 'DVP_P1-2: LN 217'<br>OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY 230.00 - 6LAKESIDE 230.00<br>OPEN BRANCH FROM BUS 314225 TO BUS 314287 CKT 1 /* 6CHARCTY 230.00 - 6CHESTF B 230.00<br>OPEN BUS 314225 /* ISLAND: 6CHARCTY 230.00<br>END                                                                                                                                                                                                                                                                                                                                       |
| DVP_P1-2: LN 84      | CONTINGENCY 'DVP_P1-2: LN 84'<br>OPEN BRANCH FROM BUS 314521 TO BUS 314713 CKT 1 /* 3PAMPL_1 115.00 - 3PAMPLIN 115.00<br>OPEN BRANCH FROM BUS 314691 TO BUS 314726 CKT 1 /* 3FARMVIL 115.00 - 3WILLIS 115.00<br>OPEN BRANCH FROM BUS 314713 TO BUS 314726 CKT 1 /* 3PAMPLIN 115.00 - 3WILLIS 115.00<br>OPEN BUS 314521 /* ISLAND: 3PAMPL_1 115.00<br>OPEN BUS 314726 /* ISLAND: 3WILLIS 115.00<br>END                                                                                                                                                                                                       |
| DVP_P4-2: 23872      | CONTINGENCY 'DVP_P4-2: 23872' /* CARSON 230 KV<br>OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 - 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314435 TO BUS 940480 CKT 1 /* 6SAPONY 230.00 - AE2-033 TAP 230.00 /* CONTINGENCY LINE ADDED FOR AE2 BUILD<br>OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 - 8CARSON 500.00<br>OPEN BUS 314455 /* 6CARSO_1 230.00 KV<br>END                                                                                                                                                   |
| AEP_P1-2_#1377       | CONTINGENCY 'AEP_P1-2_#1377'<br>OPEN BRANCH FROM BUS 242514 TO BUS 242520 CKT 1 / 242514 05J.FERR 765 242520 05J.FERR 500 1<br>OPEN BRANCH FROM BUS 242520 TO BUS 306719 CKT 1 / 242520 05J.FERR 500 306719 8ANTIOCH 500 1<br>END                                                                                                                                                                                                                                                                                                                                                                           |
| DVP_P4-2: 556T591    | CONTINGENCY 'DVP_P4-2: 556T591' /* RAWLINGS 500 KV<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00<br>OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00<br>OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00<br>OPEN BRANCH FROM BUS 314935 TO BUS 314936 CKT 1 /* 8HERITAGE 500.00 - 8RAWLINGS 500.00<br>END |
| DVP_P1-2: LN 570_FSA | CONTINGENCY 'DVP_P1-2: LN 570_FSA'<br>OPEN BRANCH FROM BUS 304183 TO BUS 918500 CKT 1 /* 8WAKE 500 TT500.00 - AA1-064 TAP 500.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Contingency Name               | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P7-1: LN 22-90-B</b>    | CONTINGENCY 'DVP_P7-1: LN 22-90-B'<br>OPEN BRANCH FROM BUS 925780 TO BUS 314702 CKT 1 /* AC1-054 TAP 115.00 - 3KERR 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314584 CKT 1 /* 3FIVEFORKSDP115.00 - 3LITTLTN 115.00<br>OPEN BRANCH FROM BUS 314265 TO BUS 314673 CKT 1 /* 3FIVEFORKSDP115.00 - 3PALMERSPRNG115.00<br>OPEN BRANCH FROM BUS 314559 TO BUS 314585 CKT 1 /* 3CAROLNA 115.00 - 3L GASTN 115.00<br>OPEN BRANCH FROM BUS 314584 TO BUS 314585 CKT 1 /* 3LITTLTN 115.00 - 3L GASTN 115.00<br>OPEN BUS 314265 /* ISLAND: 3FIVEFORKSDP115.00<br>OPEN BUS 314584 /* ISLAND: 3LITTLTN 115.00<br>OPEN BUS 314585 /* ISLAND: 3L GASTN 115.00<br>END |
| <b>DVP_P1-3: 6FARMVIL-TX#4</b> | CONTINGENCY 'DVP_P1-3: 6FARMVIL-TX#4'<br>OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 1 /* 3FARMVIL 115.00 - 6FARMVIL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>DVP_P1-3: 6FARMVIL-TX#5</b> | CONTINGENCY 'DVP_P1-3: 6FARMVIL-TX#5'<br>OPEN BRANCH FROM BUS 314691 TO BUS 314692 CKT 2 /* 3FARMVIL 115.00 - 6FARMVIL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>DVP_P4-2: 239T2141</b>      | CONTINGENCY 'DVP_P4-2: 239T2141' /* LAKEVIEW 230 KV<br>OPEN BRANCH FROM BUS 314579 TO BUS 314583 CKT 1 /* 6HORNRTN 230.00 - 6LAKEVIEW 230.00<br>OPEN BRANCH FROM BUS 314561 TO BUS 314583 CKT 1 /* 6CAROLNA 230.00 - 6LAKEVIEW 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Base Case</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>DVP_P4-2: H8T217</b>        | CONTINGENCY 'DVP_P4-2: H8T217' /* LAKESIDE 230 KV<br>OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY 230.00 - 6LAKESIDE 230.00<br>OPEN BRANCH FROM BUS 314225 TO BUS 314287 CKT 1 /* 6CHARCTY 230.00 - 6CHESTF B 230.00<br>OPEN BUS 314225 /* ISLAND: 6CHARCTY 230.00<br>OPEN BRANCH FROM BUS 314226 TO BUS 314227 CKT 1 /* 3LAKESIDE 115.00 - 6LAKESIDE 230.00<br>END                                                                                                                                                                                                                                                                      |
| <b>DVP_P1-2: LN 2060</b>       | CONTINGENCY 'DVP_P1-2: LN 2060'<br>OPEN BRANCH FROM BUS 314561 TO BUS 314599 CKT 1 /* 6CAROLNA 230.00 - 6ROA VAL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Contingency Name            | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P7-1: LN 56-2012</b> | CONTINGENCY 'DVP_P7-1: LN 56-2012'<br>OPEN BRANCH FROM BUS 314259 TO BUS 314604 CKT 1 /* 3CAROL56_1 115.00 - 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314558 TO BUS 314587 CKT 1 /* 3BOYKINS 115.00 - 3MARGTSV 115.00<br>OPEN BRANCH FROM BUS 314587 TO BUS 314604 CKT 1 /* 3MARGTSV 115.00 - 3SEABORD 115.00<br>OPEN BUS 314587 /* ISLAND: 3MARGTSV 115.00<br>OPEN BUS 314604 /* ISLAND: 3SEABORD 115.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314569 CKT 1 /* 6NORTHAMPTON230.00 - 6EARLEYS 230.00<br>OPEN BRANCH FROM BUS 314266 TO BUS 314599 CKT 1 /* 6NORTHAMPTON230.00 - 6ROA VAL 230.00<br>OPEN BUS 314266 /* ISLAND: 6NORTHAMPTON230.00<br>END |
| <b>DVP_P1-2: LN 2058</b>    | CONTINGENCY 'DVP_P1-2: LN 2058'<br>OPEN BRANCH FROM BUS 304222 TO BUS 313845 CKT 1 /* 6ROCKYMT230T230.00 - 6HATHAWAY 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>DVP_P4-2: 511T556</b>    | CONTINGENCY 'DVP_P4-2: 511T556' /* RAWLINGS 500 KV<br>OPEN BRANCH FROM BUS 940470 TO BUS 314936 CKT 1 /* AE2-031 TAP 500.00 - 8RAWLINGS 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 1 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 2 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314686 TO BUS 314906 CKT 3 /* 6CLOVER 230.00 - 8CLOVER 500.00<br>OPEN BRANCH FROM BUS 314906 TO BUS 314936 CKT 1 /* 8CLOVER 500.00 - 8RAWLINGS 500.00<br>OPEN BUS 314906 /* ISLAND: 8CLOVER 500.00<br>OPEN BUS 314915 /* ISLAND: 8CLOVER_STC 500.00<br>END                                          |
| <b>DVP_P4-2: H2T2068</b>    | CONTINGENCY 'DVP_P4-2: H2T2068' /* SEDGE HILL 230 KV<br>OPEN BRANCH FROM BUS 934610 TO BUS 314697 CKT 1 /* AD1-087 TAP 230.00 - 6SEGE HILL 230.00 /* CONTINGENCY LINE ADDED FOR AE1 BUILD<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 2 /* 3SEGE HILL 115.00 - 6SEGE HILL 230.00<br>END                                                                                                                                                                                                                                                                                                                                                           |
| <b>DVP_P1-2: LN 2181</b>    | CONTINGENCY 'DVP_P1-2: LN 2181'<br>OPEN BUS 304226 /* ISLAND: 6PA-RMOUNT#4115.00<br>OPEN BRANCH FROM BUS 304226 TO BUS 314591 CKT 1 /* 6PA-RMOUNT#4230.00 - 6NASH 230.00<br>OPEN BRANCH FROM BUS 313845 TO BUS 314591 CKT 1 /* 6HATHAWAY 230.00 - 6NASH 230.00<br>OPEN BUS 314591 /* ISLAND: 6NASH 230.00<br>END                                                                                                                                                                                                                                                                                                                                       |
| <b>DVP_P1-2: LN 238-A</b>   | CONTINGENCY 'DVP_P1-2: LN 238-A'<br>OPEN BRANCH FROM BUS 940480 TO BUS 314563 CKT 1 /* AE2-033 TAP 230.00 - 6CLUBHSE 230.00<br>OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Contingency Name               | Contingency Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DVP_P4-2: 24972-4</b>       | CONTINGENCY 'DVP_P4-2: 24972-4' /* CARSON 230 KV<br>OPEN BRANCH FROM BUS 314282 TO BUS 314285 CKT 1 /* 6CARSON 230.00 - 6CHRL249 230.00<br>OPEN BRANCH FROM BUS 314285 TO BUS 314316 CKT 1 /* 6CHRL249 230.00 - 6LOCKS 230.00<br>OPEN BRANCH FROM BUS 314314 TO BUS 314316 CKT 2 /* 3LOCKS 115.00 - 6LOCKS 230.00<br>OPEN BUS 314285 /* ISLAND: 6CHRL249 230.00<br>OPEN BRANCH FROM BUS 314282 TO BUS 314902 CKT 1 /* 6CARSON 230.00 - 8CARSON 500.00<br>OPEN BUS 314455 /* 6CARSO_1 230.00 KV<br>END                                                                                                                                                                                                                                                                                                  |
| <b>DVP_P4-2: 238T2002</b>      | CONTINGENCY 'DVP_P4-2: 238T2002' /* CARSON 230 KV<br>OPEN BRANCH FROM BUS 314282 TO BUS 314435 CKT 1 /* 6CARSON 230.00 - 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314435 TO BUS 940480 CKT 1 /* 6SAPONY 230.00 - AE2-033 TAP<br>230.00 /* CONTINGENCY LINE ADDED FOR AE2 BUILD<br>OPEN BUS 314435 /* ISLAND: 6SAPONY 230.00<br>OPEN BRANCH FROM BUS 314282 TO BUS 314331 CKT 1 /* 6CARSON 230.00 - 6POE 230.00<br>OPEN BRANCH FROM BUS 314329 TO BUS 314331 CKT 1 /* 3POE 115.00 - 6POE 230.00<br>END                                                                                                                                                                                                                                                                                                    |
| <b>DVP_P1-2: LN 2131</b>       | CONTINGENCY 'DVP_P1-2: LN 2131'<br>OPEN BRANCH FROM BUS 313714 TO BUS 313885 CKT 1 /* 6PERQUIMANS 230.00 - 6WALBMRL 230.00<br>OPEN BRANCH FROM BUS 313885 TO BUS 314637 CKT 1 /* 6WALBMRL 230.00 - 6EDENTON 230.00<br>OPEN BRANCH FROM BUS 314203 TO BUS 314637 CKT 1 /* 6MACKEYS 230.00 - 6EDENTON 230.00<br>OPEN BUS 313885 /* ISLAND: 6WALBMRL 230.00<br>OPEN BUS 314637 /* ISLAND: 6EDENTON 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>DVP_P1-3: 6CLUBHSE-TX#1</b> | CONTINGENCY 'DVP_P1-3: 6CLUBHSE-TX#1'<br>OPEN BRANCH FROM BUS 314562 TO BUS 314563 CKT 1 /* 3CLUBHSE 115.00 - 6CLUBHSE 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>DVP_P1-2: LN 218-A</b>      | CONTINGENCY 'DVP_P1-2: LN 218-A'<br>OPEN BRANCH FROM BUS 304451 TO BUS 936530 CKT 1 /* 6GREENVILE T230.00 - AD2-068 TAP 230.00<br>END                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>DVP_P4-2: 3202</b>          | CONTINGENCY 'DVP_P4-2: 3202' /* SEDGE HILL 115 KV<br>OPEN BRANCH FROM BUS 313852 TO BUS 314716 CKT 1 /* 3WELCOTAP 115.00 - 3REEDY C 115.00<br>OPEN BRANCH FROM BUS 313852 TO BUS 314718 CKT 1 /* 3WELCOTAP 115.00 - 3S BOSTN 115.00<br>OPEN BRANCH FROM BUS 313852 TO BUS 314724 CKT 1 /* 3WELCOTAP 115.00 - 3WELCO 115.00<br>OPEN BRANCH FROM BUS 314696 TO BUS 314717 CKT 1 /* 3SEEDGE HILL 115.00 - 3SINAI 115.00<br>OPEN BRANCH FROM BUS 314717 TO BUS 314718 CKT 1 /* 3SINAI 115.00 - 3S BOSTN 115.00<br>OPEN BUS 313852 /* ISLAND: 3WELCOTAP 115.00<br>OPEN BUS 314717 /* ISLAND: 3SINAI 115.00<br>OPEN BUS 314718 /* ISLAND: 3S BOSTN 115.00<br>OPEN BUS 314724 /* ISLAND: 3WELCO 115.00<br>OPEN BRANCH FROM BUS 314696 TO BUS 314697 CKT 1 /* 3SEEDGE HILL 115.00 - 6SEEDGE HILL 230.00<br>END |

## Short Circuit

## 14.8 Short Circuit

The following Breakers are overduty:

None

## Attachment 1 – One Line Diagram

