William P. Cox
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700 Universe Boulevard
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April 1, 2022

-VIA ELECTRONIC FILING-

Adam Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

RE: Docket No. 20220045-EI
Petition for determination of need for Sweatt-Whidden 230 kV transmission line in Okeechobee, DeSoto, Highlands, and Glades Counties, by Florida Power & Light Company

Dear Mr. Teitzman:

Enclosed for filing on behalf of Florida Power & Light Company ("FPL") in the above-referenced docket is FPL's Petition for determination of need for Sweatt-Whidden 230 kV transmission line in Okeechobee, DeSoto, Highlands, and Glades Counties and Exhibit A to the Petition. Also enclosed are the testimony and exhibits of FPL witness Francisco Prieto, which support the Petition.

Exhibit A to the Petition and Exhibits FP-2 and FP-4 to Mr. Prieto's testimony contain confidential information. This electronic filing includes only the redacted versions of those documents. Contemporaneous herewith, FPL will file via hand-delivery a Request for Confidential Classification.

If there are any questions regarding this transmittal, please contact me at (561) 304-5662.

Sincerely,

/s/ William P. Cox
William P. Cox
Senior Attorney
Fla. Bar No. 00093531

WPC:ec
Enclosures
cc: John T. Burnett, Esq., VP & General Counsel, Florida Power & Light Company
Keith Hetrick, Esq., General Counsel, FPSC, *khetrick@psc.state.fl.us*
Ashley Weisenfeld, Esq., Senior Attorney, FPSC, *aweisenf@psc.state.fl.us*

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Florida Power & Light Company's Petition for Determination of Need for Sweatt-Whidden 230kV Transmission Line in Okeechobee, DeSoto, Highlands and Glades Counties	)	Docket No. 20220045-EI Filed: April 1, 2022

FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR ELECTRICAL TRANSMISSION LINE

Florida Power & Light Company ("FPL"), hereby petitions the Florida Public Service Commission ("Commission") to determine, pursuant to Section 403.537, Florida Statutes (2021), and Rules 25-22.075 and 25-22.076, Florida Administrative Code, that there is a need for the proposed electrical transmission line described herein. In support of its Petition, FPL states:

1. The name and address of the affected agency are:

Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

2. FPL is an investor-owned electric utility that provides electric service to customers in its service area. FPL's full name and business address are:

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

3. All pleadings, motions, notices, staff recommendations, orders, and other documents filed or served in this proceeding should be served upon the following individuals on behalf of FPL:

William P. Cox
Senior Attorney
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408
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Florida Power & Light Company
134 W. Jefferson St.
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850-521-3919
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4. FPL proposes to construct and operate a 230kV electrical transmission line as described in Exhibit A attached hereto. The proposed transmission line would originate at FPL's existing Sweatt Substation in Okeechobee County and would terminate at FPL's existing Whidden Substation in DeSoto County (the "Sweatt-Whidden Project"). The line has a planned in-service date of December 2025.

5. The Sweatt-Whidden Project is subject to the Transmission Line Siting Act ("TLSA"), Sections 403.52-403.5365, Florida Statutes (2021).

6. Pursuant to the TLSA and Section 403.537, Florida Statutes (2021), and Rules 25-22.075 and 25-22.076, Florida Administrative Code, the Commission has jurisdiction to determine the need for the Sweatt-Whidden Project, applying the standards set forth in Section 403.537(1)(c), Florida Statutes (2021).

7. The information required to be supplied for the need determination pursuant to Rule 25-22.076, Florida Administrative Code, is set forth in Exhibit A hereto and is incorporated herein by reference.

8. FPL is charged with serving both its existing customers and new customers located in its service territory as well as any wholesale transmission customers. Currently, FPL forecasts continued customer and load growth in the territory affected by the proposed Sweatt-Whidden Project for the foreseeable future.

9. The data and analyses contained in Exhibit A demonstrate the need for the Sweatt-Whidden Project in the proposed time frame as the most cost-effective alternative available, taking into account the demand for electricity, the need for electric system reliability and integrity, the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state, the starting and ending points of the line, and other relevant matters pursuant to Section 403.537(1)(b), Florida Statutes (2021).

10. Pursuant to Rule 25-22.076(5), Florida Administrative Code, Exhibit A and the pre-filed direct testimony of FPL witness Frank Prieto submitted contemporaneously with this Petition describe in detail the major reasons for the Sweatt-Whidden Project. Specifically, the Project is needed in December 2025 to: (a) improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden Substations; (b) increase east to west power transfer capabilities of the transmission network by providing an additional hardened resilient 230kV circuit between the east and west areas of FPL's territory north of lake Okeechobee; (c) relieve potential overloads and low voltage conditions under contingency events; and (d) reduce line loading on existing transmission circuits.

11. In order to enable FPL and the Commission to comply with the notice requirements of Section 403.537(1)(a), Florida Statutes (2021) and Rule 25-22.075, Florida Administrative Code, FPL previously filed a Notice of Intent to File Petition for Transmission Line Need Determination on March 2, 2022. The Commission has set the final hearing for this docket for May 16, 2022. FPL has published the notice of that hearing in the appropriate newspapers in accordance with the statutory requirements and the requirements of Rule 25-22.075(4), Florida Administrative Code.

WHEREFORE, FPL respectfully requests that the Commission:

A. Hold a hearing on this Petition in accordance with Section 403.537, Florida Statutes, Chapter 120, Florida Statutes (2021), and applicable rules of the Commission.

B. Determine that there is a need for the Sweatt-Whidden Project, with the starting point at FPL's existing Sweatt Substation in Okeechobee County, and the ending point at FPL's existing Whidden Substation in DeSoto County, and that the cost and reliability benefits of the Sweatt-Whidden Project would be enhanced by construction of the line in a combination of new and existing right of ways, subject to the final corridor determination under the Transmission Line Siting Act; and

C. Enter a final order determining such need for the Sweatt-Whidden Project.

Respectfully submitted,

By: *s/ William P. Cox*
William P. Cox
Senior Attorney
Florida Bar No. 0093531
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420
(561) 304-5662
(561) 691-7135 (fax)

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing was furnished by Electronic Mail to the following on the 1st day of April, 2022:

Keith Hetrick, Esq., General Counsel
Ashley Weisenfeld, Esq., Senior Attorney
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

By: *s/ William P. Cox*
William P. Cox, Esq.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20220045-EI

FLORIDA POWER AND LIGHT COMPANY

APRIL 1, 2022

IN RE: PETITION FOR DETERMINATION OF NEED FOR SWEATT-WHIDDEN 230KV TRANSMISSION LINE IN OKEECHOBEE, HIGHLANDS, AND DESOTO COUNTIES, BY FLORIDA POWER & LIGHT COMPANY

EXHIBIT A TO THE PETITION

The Sweatt-Whidden Project

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Executive Summary

This Petition provides the background information concerning the Sweatt-Whidden 230kV Project ("SWP" or "Project"), as well as the need for and benefits resulting from the SWP. The need for the SWP is based on the following considerations:

- The need to improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden substations;
- The need to provide an additional transmission path to increase east to west power transfer capabilities; and
- The need to mitigate potential overloads and low voltage conditions under contingency events.

The SWP will efficiently and effectively meet this need by improving reliability for FPL customers currently served from the existing 69kV circuit between Okeechobee and Whidden substations, increasing east to west power transfer capabilities of the transmission network by providing a resilient, hardened 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee, relieving potential overloads and low voltage conditions under contingency events, and reducing line loading on existing transmission circuits.

FPL evaluated multiple transmission alternatives for meeting this identified need, which resulted in the selection of the SWP. The SWP presents the best alternative, taking into account the demand for electricity, enhancing electric system reliability and integrity, and addressing the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state. Furthermore, the project meets area load requirements by serving potential

future industrial, commercial and residential load, while maximizing system reliability and minimizing cost to customers.

I. Description of FPL Electrical Facilities

In order to provide an overview of FPL's existing electrical transmission system, a map of FPL's transmission network indicating the general location of generating plants, major substations, and transmission lines is shown in Attachment 1. As shown in Attachment 1, the load in the west portion of FPL's West Region is presently served by existing generation resources, one 500kV circuit east-west, one 230kV circuit east-west, one 138kV circuit east-west, and one 69kV circuit east-west. FPL's West Region also has five 230kV tie lines with other utilities.

A listing of FPL's historical and forecasted peak demand is provided in Schedules 3.1 and 3.2 of Florida Power & Light Company and Gulf Power Company's Ten Year Power Plant Site Plan (2022-2031) submitted on April 1, 2022, to the Florida Public Service Commission (the "Commission"), incorporated herein as Attachments 2 and 3.

The SWP will address the increasing forecasted demand in the Okeechobee, Highlands, DeSoto, Collier, Lee, Sarasota, and Manatee Counties and enhance reliability in the region by minimizing the area's exposure to double contingency events. The SWP best meets the needs of the Project Service Area, as described more fully in the following section.

II. The Sweatt-Whidden Project

Over the past six years (2015-2021), the FPL West Region has reported winter peak loads between 4000 MW and 5400 MW. FPL is forecasting that by 2031, the winter load in the West Region, an area that includes Collier, Lee, Hendry, Charlotte, Glades, Sarasota, DeSoto and Manatee Counties, will be approximately 5800 MW (an increase of approximately 400 MW with respect to the 2020 forecast). Transmission assessment studies conducted by FPL in 2021 have identified potential system limitations that will require reliability improvements for Okeechobee, Highlands, DeSoto, Collier, Lee, Sarasota, and Manatee Counties. The studies also identified that by 2025, load to generation imbalance in the West Region continues to grow, and the system would benefit from an increase in transfer capability into the area.

Currently, the east to west power transfer capability under several contingency scenarios, such as generation unavailable and [redacted], is limited and the existing 69kV line is operating normally open to avoid potential thermal overloads. The proposed SWP would convert portions of FPL's existing Okeechobee-Whidden 69kV right-of-way ("ROW") to address the anticipated reliability limitation concerns beginning in 2025.

The SWP will consist of a new 230kV transmission line extending from FPL's Sweatt substation to FPL's Whidden substation, which will be designed to improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden

substations, increase east to west power transfer capabilities of the transmission network by providing a resilient, hardened 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee, relieve potential overloads and low voltage conditions under contingency events, and reduce line loading on existing transmission circuits.

The SWP includes the construction of approximately 21 miles of a new single circuit 230kV transmission line in Okeechobee County and the conversion of approximately 59 miles of 69kV to 230kV in Okeechobee, Highlands, and DeSoto Counties (subject to final certification under the Florida Transmission Line Siting Act or "TLSA"). The line will be constructed with a single pole design on existing and new ROW and will have a voltage of 230kV. Approximately 75% of the new transmission line will follow the path of the existing 69kV transmission line. The project will also include the rebuild/conversion to 230kV of Brighton, Basinger (Glades Electric Cooperative, Inc. ("GEC")), Morgan Henderson (GEC), and Dorr Field substations. The entire SWP will serve existing and future FPL distribution substations in FPL's service territory and increase capacity to the transmission network with a resilient, hardened 230kV line.

Attachment 4 Page 1 is a map showing the SWP corridor route, along with the existing electrical facilities in the area. The corridor route is conceptual and for illustrative purposes only. The ultimate route will be selected through the TLSA process.

The estimated construction costs for SWP include design, engineering, ROW preparation, and land acquisition, in nominal or year-of-installation dollars.

Sweatt-Whidden Project Construction Costs	Estimated Cost in MM
Estimated Transmission Project Costs: Sweatt-Whidden 230kV line	$213.5 ($226.4 CPVRR)

III. Transmission Planning Criteria and Process

FPL plans, designs, and operates its transmission system to comply with North American Electric Reliability Corporation ("NERC") Reliability Standards. The Transmission System Planning Performance Requirements Reliability Standard (TPL-001-4) defines scenarios and expected levels of system performance that the Bulk Electric System ("BES") must comply with in the long-term planning horizon. In general, the system will remain stable and both thermal and voltage limits will be within applicable facility ratings for each of the contingency categories listed on Table 1 of the NERC Reliability Standard TPL-001-4 provided in Attachment 5. FPL follows the NERC standard guidance on system performance requirements for its transmission planning criteria.

FPL's transmission planning process consists of five major steps: (1) the preparation of system models, (2) the assessment of the transmission system performance to comply with NERC Reliability Standards, (3) the development and evaluation of transmission expansion alternatives, (4) the selection and approval of the preferred alternatives, and (5) the incorporation of the

expansion plan into the Florida Reliability Coordinating Council ("FRCC") Regional Planning Process. A more detailed discussion of these steps is provided in Attachment 6.

IV. Discussion of Need and Benefits

The need for the SWP is based on the following considerations:

- The need to improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden substations;
- The need to provide an additional transmission path to increase east to west power transfer capabilities; and
- The need to mitigate potential overloads and low voltage conditions under contingency events.

The existing Okeechobee-Whidden 69kV line is operated in a radial configuration due to contingency loading limitations, with a normal open switch at Childs 69kV substation. As a result of the radial configuration, customers along this line have experienced service interruptions for single contingency scenarios on the transmission system. In addition, transmission assessment studies conducted by FPL in 2021 have identified potential system limitations that will require reliability improvements for Okeechobee, Highlands, DeSoto, Collier, Lee, Sarasota, and Manatee Counties. These studies have also identified that by 2025, load to generation imbalance in the West Region continues to grow. The east to west power transfer capability under several contingency scenarios is limited, supporting the need for an additional transmission path.

The SWP will address these system reliability deficiencies and provide a resilient, hardened path from east to west. A detailed description of the system improvements follows:

Improve Customer Reliability

The existing Okeechobee-Whidden 69kV line is currently operated normally open at Childs 69kV substation to avoid exceeding line rating operating limits for contingency events. As a result of the radial configuration, customers along this line have experienced multiple service interruptions for single contingency scenarios in the transmission system. The SWP will provide a resilient, hardened path that will be operated normally closed and will reduce customer interruptions. The SWP will allow for a more reliable protection scheme. FPL studies have identified the following contingency event as one of the most critical scenarios for the Project Service Area reliability: With the Okeechobee-Whidden 69kV line operating normally closed, the loss of [redacted] line section followed by the loss of [redacted] line. Under this scenario, the Okeechobee-Whidden 69kV line could exceed the line rating operating limit and substation voltages could drop to a potential collapse (see Appendix B page 9). In order to avoid this type of event, the system will be sectionalized after the first contingency, causing consequential loss of service after the second contingency for FPL and GEC customers served from Dorr Field, Morgan Henderson (GEC), Brighton, Basinger (GEC), Okeechobee, JC Eisinger (GEC), Sherman and Allapattah substations. With the construction of the SWP, the number of impacted substations by the same contingency event is reduced. In addition, the SWP will considerably improve the voltage support in the area (see Appendix B page 10) to efficiently and effectively serve existing and future load in FPL and GEC distribution substations along the route of the SWP.

Increase Transfer Capability

Currently, the existing 69kV circuit between Okeechobee and Whidden substations is operated on a radial configuration resulting in [redacted] of power transfer capability between the east and west regions across this circuit. If the 69kV circuit is operated normally closed, the east to west flows would not change for the system under normal conditions (see Appendix A page 1), while under single contingency conditions, the flows will increase between [redacted] and [redacted] (see Appendix A pages 3, 5 & 7). The construction of the SWP will provide a significant increase of transfer capability for the system in the range of [redacted] under normal conditions (see Appendix A page 1) and [redacted] under single contingency conditions (see Appendix A pages 3, 5 & 7). The SWP will increase the power transfer capabilities of the transmission network by providing an additional hardened, resilient 230kV circuit between the east and west areas of FPL's territory, north of Lake Okeechobee.

Mitigate Potential System Limitations

FPL studies have identified the following contingency event as one of the most critical scenarios for the system: [redacted]. For the aforementioned scenario, several transmission lines could experience overloads as a result of the increase in the east to west flows including the existing 69kV circuit between Okeechobee and Whidden substations if operating normally closed. Appendix B page 1 shows the power flows under the scenario in Winter 2025 without the SWP implemented and operating the Okeechobee-Whidden 69kV line normally closed. The results show the [redacted] line loading as high as [redacted] thermal rating and the [redacted] line loading as high as [redacted] thermal rating (see Appendix B page 1).

For another contingency scenario, [redacted], the results show the [redacted] line loading as high as [redacted] thermal rating (see Appendix B page 5). In order to mitigate the overloads mentioned above, it would be necessary to implement load management system in the West Area and reduce generation in the Central Area of FPL's service territory.

In addition, the following contingency event has significant reliability impact in the Project Service Area: With the Okeechobee-Whidden 69kV line operating normally closed, the loss of [redacted] line followed by the loss of [redacted] line (N-1-1). Under this scenario, the Okeechobee-Whidden 69kV would exceed the line rating operating limit and substation voltages would drop to a potential collapse. In order to avoid this type of event, the system will be sectionalized after the first contingency, causing consequential load loss after the second contingency for customers served from Dorr Field, Morgan Henderson (GEC), Brighton, Basinger (GEC), Okeechobee, JC Eisinger (GEC), Sherman and Allapattah substations (see Appendix B, page 9).

Appendix B pages 2, 6, and 10 show loadflow output diagrams for 2025 Winter peak conditions with the SWP in-service under the contingencies described above. With the construction of the SWP, there is a new, hardened, resilient 230kV east to west connection which resolves the 69kV overloads by converting the line, mitigates the overloads in the [redacted] and reduces the number of impacted substations under N-1-1 contingencies. In addition, the SWP will considerably improve the voltage support in the area.

Reduce Line Loading

Due to the limited number of transmission connections between the east and west FPL regions, the [redacted] transmission line in combination with another generation or transmission line outage would cause several transmission lines to overload. For the scenario of [redacted] circuit would experience overloads as high as [redacted] thermal rating and the [redacted] circuit will experience overloads as high as [redacted] thermal rating (see Appendix C page 1). Moreover, the loss of any section of the [redacted] circuit followed by the loss of [redacted] line would cause overloads on the [redacted] line sections as high as [redacted] thermal rating (see Appendix C page 9) and in the [redacted] line section as high as [redacted] thermal rating (see Appendix B page 5).

Notably, Appendix C page 2 shows that overloads in the [redacted] line sections are reduced between [redacted] and [redacted] under contingency scenarios with the SWP in-service. It also shows that the [redacted] line section overload is reduced by [redacted].

Appendix C pages 6 and 10 show overloads decreasing by [redacted] in the [redacted] line section and the [redacted] line section with the SWP in-service.

Project Benefits

The construction of the SWP provides the following benefits to the Project Service Area:

- Provides a more reliable delivery of power to FPL customers;
- Substantially mitigates customer impact during contingency events;
- Provides resilient, hardened transmission service to the area;
- Improves voltage support in the area to efficiently and effectively serve existing and future load in FPL distribution substations along the route of the project;
- Increases east to west power transfer capabilities of the transmission network by providing an additional 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee;
- Reduces line loading on existing transmission circuits;
- Reduces transmission losses by approximately 3 MW at peak load levels and approximately 2 MW at off peak load levels; and
- Meets the Project Service Area's long term reliability requirements.

V. Discussion of Project Transmission Alternatives

In order to maintain a reliable electric system for the Project Service Area and meet the identified need discussed above, FPL evaluated the following transmission alternatives for SWP. The factors used to evaluate the performance of these alternatives include reliability, cost, feasibility, and compatibility with long range plans. Attachment 8 includes a matrix comparing each of the transmission alternatives.

Alternative I

The Ft. Drum-Whidden Project consists of a new 230kV transmission line extending from FPL's Ft. Drum substation in Indian River County to FPL's Whidden substation in DeSoto County. It will require the construction of approximately 92 miles (subject to certification under the Florida TLSA) of a single circuit 230kV transmission line in the Indian River, Okeechobee, Highlands, and DeSoto Counties.

Attachment 4 Page 2 is a map showing the proposed Alternative I Project along with the existing electrical facilities in the area. The line route is conceptual and for illustrative purposes only. The estimated construction cost of this alternative is $283.9 million ($300.3 million CPVRR).

This alternative was rejected for the following reasons:

1. It does not provide the needed reliability improvements for all customers served from the existing 69kV circuit between Okeechobee and Whidden substations.
2. The cost of the alternative is approximately $70 million higher than the SWP.
3. This alternative does not provide for future transmission network flexibility, nor does it substantially improve reliability in the Project Service Area because it only allows for reconfiguration of existing infrastructure on the 69kV network.

Alternative II

The Martin-Whidden Project consists of a new 230kV transmission line extending from FPL's Martin substation in Martin County to FPL's Whidden substation in DeSoto County. It would require the construction of approximately 87 miles (subject to certification under the Florida

TLSA) of a single circuit 230 kV transmission line in Martin, Okeechobee, Highlands, and DeSoto Counties.

Attachment 4 Page 3 is a map showing the proposed Alternative II Project along with the existing electrical facilities in the area. The line route is conceptual and for illustrative purposes only. The estimated construction cost of this alternative is $223.3 million ($236.5 million CPVRR).

This alternative was rejected for the following reasons:

1. It does not provide the needed reliability improvements for all customers served from the existing 69kV circuit between Okeechobee and Whidden substations.
2. The cost of the alternative is approximately $10 million higher than the SWP.
3. This alternative does not substantially improve reliability in the Project Service Area because it only allows for reconfiguration of existing infrastructure on the 69kV network.

Attachment 8 shows the decision-making analysis which summarizes the points of comparison of the SWP and Alternatives I and II, described above. The points of comparison are cost, reliability, ROW diversity, system expandability, operational flexibility, and construction difficulty.

VI. Adverse Consequences of Not Constructing the Sweatt-WhiddenProject

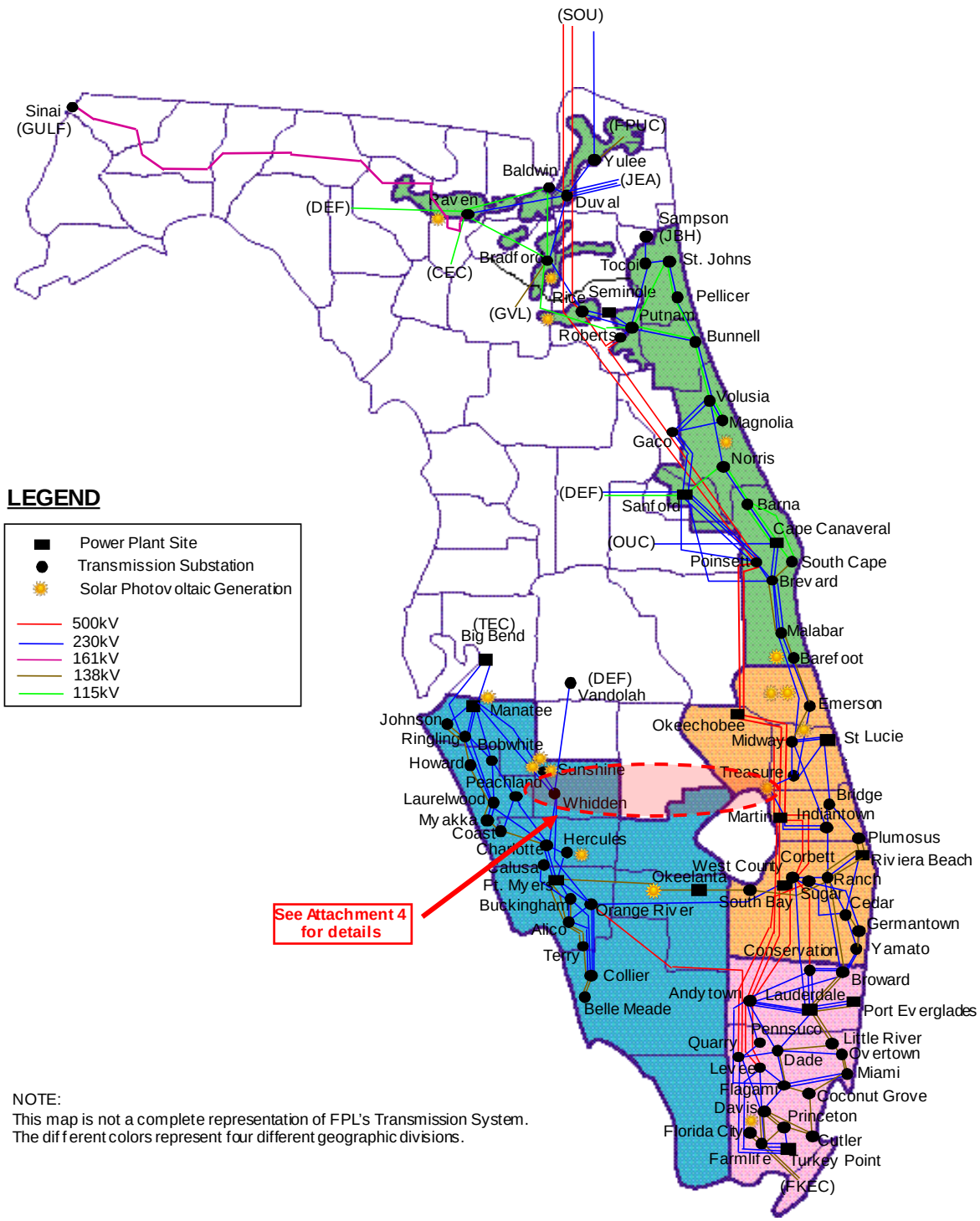
The purpose and need for the SWP is to improve reliability for FPL customers as described in detail above. If the SWP is not built by December 2025, then sufficient transmission capacity

would not be available to serve the existing and future industrial, commercial, and residential customers in the Project Service Area and, by virtue of the current radial transmission service configuration, system reliability and integrity would not be at the same level delivered to other FPL customers which have normal looped transmission service.

VII. Conclusion

The SWP is needed by December 2025 to efficiently and effectively improve reliability for customers served from the FPL's existing 69kV circuit between Okeechobee and Whidden substations, provide a transmission route to increase east to west power transfer capability, mitigate potential overloads and low voltage conditions under contingency events, and reduce line loading on existing transmission circuits. The Project is the most cost-effective alternative, taking into account the demand for electricity, the enhancement of electric system reliability and integrity, and the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state. Furthermore, the Project meets area load requirements by serving potential future industrial, commercial and residential load, while maximizing system reliability and minimizing cost to customers. The Commission, therefore, should grant FPL's Petition for a Determination of Need for the Sweatt-Whidden Project and determine that the cost and reliability benefits of the Project would preserve and enhance electric system reliability and integrity in the area.

FPL Substation and Transmission System Configuration



NOTE:
This map is not a complete representation of FPL's Transmission System.
The different colors represent four different geographic divisions.

ATTACHMENT 2

Schedule 3.1: FPL
History of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2012	21,440	431	21,009	0	1,013	1,351	833	810	19,594
2013	21,576	396	21,180	0	1,025	1,417	833	839	19,718
2014	22,935	1,155	21,780	0	1,010	1,494	843	866	21,082
2015	22,959	1,303	21,656	0	878	1,523	826	873	21,255
2016	23,858	1,367	22,491	0	882	1,548	836	888	22,140
2017	23,373	1,393	21,980	0	910	1,560	825	903	21,639
2018	23,217	1,338	21,879	0	866	1,571	866	916	21,485
2019	24,241	1,292	22,949	0	852	1,579	879	926	22,510
2020	24,499	1,530	22,969	0	845	1,589	887	940	22,767
2021	24,042	1,333	22,709	0	830	1,600	882	956	22,330

Historical Values (2012 - 2021):

Col. (2) and Col. (3) are actual values for historical Summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9) and may incorporate the effects of load control if load control was operated on these peak days. Col. (2) represents the actual Net Firm Demand.

Col. (4) represents "Retail Demand" and is derived by the formula: Col. (2) - Col. (3).

Col. (5) through Col. (9) represent actual DSM capabilities and represent annual (12-month) values.

Col.(6) values for 2015-on reflect a hardware communications issue identified in 2015 that was subsequently resolved. A number of participating customers did not respond to FPL's efforts to reach them or refused access to correct the equipment problem at their home. As a result, these customers were removed from the program.

Col. (10) represents a hypothetical "Net Firm Demand" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col.(6) - Col. (8).

Schedule 3.1: Gulf
History of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2012	2,351	76	2,275	0	0	206	0	212	2,351
2013	2,362	74	2,288	0	0	229	0	220	2,362
2014	2,437	75	2,362	0	0	243	0	224	2,437
2015	2,495	78	2,417	0	0	256	0	231	2,495
2016	2,508	76	2,432	0	0	261	0	231	2,508
2017	2,434	74	2,360	0	0	266	0	232	2,434
2018	2,491	80	2,411	0	0	268	0	233	2,491
2019	2,472	75	2,397	0	0	270	0	234	2,472
2020	2,410	65	2,345	0	0	272	0	234	2,410
2021	2,441	68	2,373	0	0	273	0	235	2,441

Historical Values (2012 - 2021):

Col. (2) and Col. (3) are actual values for historical Summer peaks and include the effects of conservation (Col. 7 & Col. 9).

Col. (4) represents "Retail Demand" and is derived by the formula: Col. (2) - Col. (3).

Col. (5) through Col. (9) represent actual DSM capabilities and represent annual (12-month) values.

Col. (10) is derived by the formula Col. (10) = Col. (2) - Col. (6) - Col. (8).

ATTACHMENT 2

Recommended Plan and Business as Usual Plan
Schedule 3.1
Forecast of Summer Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2022	27,310	1,497	25,813	0	861	20	937	23	25,469
2023	27,735	1,507	26,228	0	865	35	946	41	25,848
2024	28,136	1,502	26,634	0	870	51	954	60	26,202
2025	28,419	1,445	26,974	0	880	51	963	60	26,466
2026	28,800	1,446	27,354	0	895	51	972	60	26,823
2027	29,103	1,352	27,751	0	913	51	981	60	27,098
2028	29,476	1,338	28,138	0	935	51	991	60	27,440
2029	29,986	1,329	28,657	0	959	51	1,000	60	27,917
2030	30,485	1,335	29,150	0	984	51	1,009	60	28,382
2031	30,924	1,287	29,638	0	1,010	51	1,018	60	28,787

Projected Values (2022 - 2031):

Col. (2) - Col. (4) represent forecasted peak and do not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) through Col. (9) represent cumulative load management, incremental conservation, and load management.
All values are projected August values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and curtailable programs/rates.

Col. (10) represents a "Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include Lee County and FKEC whose loads are served by FPL.

The Summer peak values are the same for both the Recommended (Extreme Winter) and Business as Usual (P50 Winter) plans.

ATTACHMENT 3

Schedule 3.2: FPL
History of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2012	17,934	382	17,552	0	856	755	722	314	16,356
2013	15,931	348	15,583	0	843	781	567	326	14,521
2014	17,500	890	16,610	0	828	805	590	337	16,083
2015	19,718	1,329	18,389	0	822	835	551	346	18,345
2016	17,031	1,087	15,944	0	742	858	570	352	15,719
2017	17,172	1,098	16,074	0	759	861	577	364	15,836
2018	19,109	1,262	17,847	0	750	864	588	369	17,771
2019	16,795	1,432	15,363	0	706	867	613	379	15,476
2020	17,514	1,243	16,271	0	702	870	614	390	16,197
2021	16,301	1,281	15,020	0	689	872	619	402	14,993

Historical Values (2012 - 2021):

Col. (2) and Col. (3) are actual values for historical Winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9) and may incorporate the effects of load control if load control was operated on these peak days. Col. (2) represents the actual Net Firm Demand.

Col. (4) represents "Retail Demand" and is derived by the formula: Col. (2) - Col. (3).

Col. (5) through Col. (9) represent actual DSM capabilities and represent annual (12-month) values.

Col.(6) values for 2015-on reflect a hardware communications issue identified in 2015 that was subsequently resolved. A number of participating customers did not respond to FPL's efforts to reach them or refused access to correct the equipment problem at their home. As a result, these customers were removed from the program.

Col. (10) represents a hypothetical "Net Firm Demand" as if the load control values had definitely been exercised on the peak.
Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col.(6) - Col. (8).

Schedule 3.2: Gulf
History of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2012	2,139	70	2,069	0	0	317	0	165	2,139
2013	1,766	90	1,676	0	0	341	0	169	1,766
2014	2,694	85	2,609	0	0	356	0	172	2,694
2015	2,492	74	2,418	0	0	369	0	176	2,492
2016	2,043	80	1,963	0	0	374	0	176	2,043
2017	2,211	89	2,122	0	0	377	0	177	2,211
2018	2,809	70	2,739	0	0	379	0	178	2,809
2019	2,066	66	2,000	0	0	381	0	178	2,066
2020	2,129	69	2,060	0	0	382	0	178	2,129
2021	2,233	63	2,170	0	0	384	0	178	2,233

Historical Values (2012 - 2021):

Col. (2) and Col. (3) are actual values for historical Winter peaks and include the effects of conservation (Col. 7 & Col. 9).

Col. (4) represents "Retail Demand" and is derived by the formula: Col. (2) - Col. (3).

Col. (5) through Col. (9) represent actual DSM capabilities and represent annual (12-month) values.

Col. (10) is derived by the formula Col. (10) = Col. (2) - Col. (6) - Col. (8).

ATTACHMENT 3

Business as Usual Plan - P50 Winter Forecast
Schedule 3.2
Forecast of Winter Peak Demand (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
January of Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2022	22,551	1,277	21,274	0	713	5	654	16	21,163
2023	22,946	1,298	21,647	0	723	7	660	27	21,527
2024	23,344	1,325	22,019	0	735	9	667	39	21,894
2025	23,590	1,235	22,356	0	748	9	673	39	22,121
2026	23,936	1,237	22,698	0	771	9	679	39	22,438
2027	24,201	1,154	23,047	0	796	9	684	39	22,673
2028	24,545	1,134	23,411	0	827	9	689	39	22,982
2029	24,919	1,140	23,779	0	859	9	694	39	23,318
2030	25,273	1,131	24,142	0	894	9	699	39	23,632
2031	25,681	1,076	24,604	0	929	9	704	39	23,999

Projected Values (2022 - 2031):

Col. (2) - Col. (4) represent forecasted peak and do not include incremental conservation, cumulative load management, or incremental load management.

Col. (5) through Col. (9) represent cumulative load management, incremental conservation, and load management.
All values are projected January values.

Col. (8) represents FPL's Business On Call, CDR, CILC, and curtailable programs/rates.

Col. (10) represents a "Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include Lee County and FKEC whose loads are served by FPL.

Attachment No. 4 is Confidential in Its Entirety

(Bates Nos. 000020 - 000022)

The Transmission Planning Criteria

FPL plans, designs, and operates its transmission system to comply with North America Electric Reliability Corporation (NERC) Reliability Standards. TPL-001-4 Reliability Standard defines scenarios and expected levels of system performance that the Bulk Electric System (BES) should comply with in the long-term planning horizon. In general, the system will remain stable and both thermal and voltage limits will be within applicable facility ratings for each of the contingency categories listed on Table 1 of NERC Reliability Standard TPL-001-4 (see page 3 of this Attachment 5). FPL follows the standard guidance on system performance requirements for its transmission planning criteria. Category P0 addresses system performance with no contingencies and all facilities in service. Categories P1 and P2 address system performance following a single contingency. Categories P3 through P7 address system performance following multiple contingencies. Finally, the standard addresses system performance following Extreme Events where multiple facilities are removed from service.

The need for transmission system upgrades is most frequently based on potential overload and/or under-voltage conditions associated with Category P2 through P7 type contingencies. For each of these types of contingencies, the response of the power system is analyzed to ensure system performance, resulting conditions, and severity of potential overload/undervoltage conditions are consistent with the NERC Reliability Standards. Generally, for Extreme Events, contingency analysis is used to identify potential situations of cascading interruptions and/or instability. There may be isolated cases where reliability concerns combined with other factors may justify a more conservative approach in developing alternatives than the normal planning criteria. In addition to the NERC reliability standards,

FPL proposes projects in the short-term planning horizon to address additional changes across the BES. These include changes of power transfers across areas associated with transmission service, generator interconnection requests, or generation retirements; potential generation-to-load area imbalance such as in the Southeast, Northeast, Southwest and Northwest areas of FPL's territory; and to improve overall reliability of the BES, such as providing loop service to customers and addition of relay points on transmission lines with several distribution stations.

The planned transmission system, with its expected loads and transfers, must be stable and within applicable ratings for all categories of contingency scenarios.

The design of new transmission connections should consider and minimize, to the extent practical, the adverse consequences of all contingency categories and improve system reliability.

Table 1 – Steady State & Stability Performance Planning Events

Steady State & Stability:

a. The System shall remain stable. Cascading and uncontrolled islanding shall not occur.

b. Consequential Load Loss as well as generation loss is acceptable as a consequence of any event excluding P0.

c. Simulate the removal of all elements that Protection Systems and other controls are expected to automatically disconnect for each event.

d. Simulate Normal Clearing unless otherwise specified.

e. Planned System adjustments such as Transmission configuration changes and re-dispatch of generation are allowed if such adjustments are executable within the time duration applicable to the Facility Ratings.

Steady State Only:

f. Applicable Facility Ratings shall not be exceeded.

g. System steady state voltages and post-Contingency voltage deviations shall be within acceptable limits as established by the Planning Coordinator and the Transmission Planner.

h. Planning event P0 is applicable to steady state only.

i. The response of voltage sensitive Load that is disconnected from the System by end-user equipment associated with an event shall not be used to meet steady state performance requirements.

Stability Only:

j. Transient voltage response shall be within acceptable limits established by the Planning Coordinator and the Transmission Planner.

Category	Initial Condition	Event[1]	Fault Type[2]	BES Level[3]	Interruption of Firm Transmission Service Allowed[4]	Non-Consequential Load Loss Allowed
P0 No Contingency	Normal System	None	N/A	EHV, HV	No	No
P1 Single Contingency	Normal System	Loss of one of the following: 1. Generator 2. Transmission Circuit 3. Transformer[5] 4. Shunt Device[6]	3Ø	EHV, HV	No[9]	No[12]
		5. Single Pole of a DC line	SLG			
P2 Single Contingency	Normal System	1. Opening of a line section w/o a fault[7]	N/A	EHV, HV	No[9]	No[12]
		2. Bus Section Fault	SLG	EHV	No[9]	No
				HV	Yes	Yes
		3. Internal Breaker Fault[8] (non-Bus-tie Breaker)	SLG	EHV	No[9]	No
				HV	Yes	Yes
		4. Internal Breaker Fault (Bus-tie Breaker)[8]	SLG	EHV, HV	Yes	Yes

Standard TPL-001-4 — Transmission System Planning Performance Requirements

Category	Initial Condition	Event [1]	Fault Type [2]	BES Level [3]	Interruption of Firm Transmission Service Allowed [4]	Non-Consequential Load Loss Allowed
P3 Multiple Contingency	Loss of generator unit followed by System adjustments[9]	Loss of one of the following: 1. Generator 2. Transmission Circuit 3. Transformer [5] 4. Shunt Device [6]	3Ø	EHV, HV	No[9]	No[12]
		5. Single pole of a DC line	SLG			
P4 Multiple Contingency *(Fault plus stuck breaker[10])*	Normal System	Loss of multiple elements caused by a stuck breaker [10](non-Bus-tie Breaker) attempting to clear a Fault on one of the following: 1. Generator 2. Transmission Circuit 3. Transformer [5] 4. Shunt Device [6] 5. Bus Section	SLG	EHV	No[9]	No
				HV	Yes	Yes
		6. Loss of multiple elements caused by a stuck breaker[10] (Bus-tie Breaker) attempting to clear a Fault on the associated bus	SLG	EHV, HV	Yes	Yes
P5 Multiple Contingency *(Fault plus relay failure to operate)*	Normal System	Delayed Fault Clearing due to the failure of a non-redundant relay[13] protecting the Faulted element to operate as designed, for one of the following: 1. Generator 2. Transmission Circuit 3. Transformer [5] 4. Shunt Device [6] 5. Bus Section	SLG	EHV	No[9]	No
				HV	Yes	Yes
P6 Multiple Contingency *(Two overlapping singles)*	Loss of one of the following followed by System adjustments:[9] 1. Transmission Circuit 2. Transformer [5] 3. Shunt Device[6] 4. Single pole of a DC line	Loss of one of the following: 1. Transmission Circuit 2. Transformer [5] 3. Shunt Device [6]	3Ø	EHV, HV	Yes	Yes
		4. Single pole of a DC line	SLG	EHV, HV	Yes	Yes

Category	Initial Condition	Event [1]	Fault Type [2]	BES Level [3]	Interruption of Firm Transmission Service Allowed [4]	Non-Consequential Load Loss Allowed
P7 Multiple Contingency *(Common Structure)*	Normal System	The loss of: 1. Any two adjacent (vertically or horizontally) circuits on common structure [11] 2. Loss of a bipolar DC line	SLG	EHV, HV	Yes	Yes

Table 1 – Steady State & Stability Performance Extreme Events

Steady State & Stability

For all extreme events evaluated:

a. Simulate the removal of all elements that Protection Systems and automatic controls are expected to disconnect for each Contingency.

b. Simulate Normal Clearing unless otherwise specified.

Steady State

1. Loss of a single generator, Transmission Circuit, single pole of a DC Line, shunt device, or transformer forced out of service followed by another single generator, Transmission Circuit, single pole of a different DC Line, shunt device, or transformer forced out of service prior to System adjustments.
2. Local area events affecting the Transmission System such as:
   a. Loss of a tower line with three or more circuits.[11]
   b. Loss of all Transmission lines on a common Right-of-Way[11].
   c. Loss of a switching station or substation (loss of one voltage level plus transformers).
   d. Loss of all generating units at a generating station.
   e. Loss of a large Load or major Load center.
3. Wide area events affecting the Transmission System based on System topology such as:
   a. Loss of two generating stations resulting from conditions such as:
      i. Loss of a large gas pipeline into a region or multiple regions that have significant gas-fired generation.
      ii. Loss of the use of a large body of water as the cooling source for generation.
      iii. Wildfires.
      iv. Severe weather, e.g., hurricanes, tornadoes, etc.
      v. A successful cyber attack.
      vi. Shutdown of a nuclear power plant(s) and related facilities for a day or more for common causes such as problems with similarly designed plants.
   b. Other events based upon operating experience that may result in wide area disturbances.

Stability

1. With an initial condition of a single generator, Transmission circuit, single pole of a DC line, shunt device, or transformer forced out of service, apply a 3Ø fault on another single generator, Transmission circuit, single pole of a different DC line, shunt device, or transformer prior to System adjustments.
2. Local or wide area events affecting the Transmission System such as:
   a. 3Ø fault on generator with stuck breaker[10] or a relay failure[13] resulting in Delayed Fault Clearing.
   b. 3Ø fault on Transmission circuit with stuck breaker[10] or a relay failure[13] resulting in Delayed Fault Clearing.
   c. 3Ø fault on transformer with stuck breaker[10] or a relay failure[13] resulting in Delayed Fault Clearing.
   d. 3Ø fault on bus section with stuck breaker[10] or a relay failure[13] resulting in Delayed Fault Clearing.
   e. 3Ø internal breaker fault.
   f. Other events based upon operating experience, such as consideration of initiating events that experience suggests may result in wide area disturbances

Table 1 – Steady State & Stability Performance Footnotes
(Planning Events and Extreme Events)

1. If the event analyzed involves BES elements at multiple System voltage levels, the lowest System voltage level of the element(s) removed for the analyzed event determines the stated performance criteria regarding allowances for interruptions of Firm Transmission Service and Non-Consequential Load Loss.
2. Unless specified otherwise, simulate Normal Clearing of faults. Single line to ground (SLG) or three-phase (3Ø) are the fault types that must be evaluated in Stability simulations for the event described. A 3Ø or a double line to ground fault study indicating the criteria are being met is sufficient evidence that a SLG condition would also meet the criteria.
3. Bulk Electric System (BES) level references include extra-high voltage (EHV) Facilities defined as greater than 300kV and high voltage (HV) Facilities defined as the 300kV and lower voltage Systems. The designation of EHV and HV is used to distinguish between stated performance criteria allowances for interruption of Firm Transmission Service and Non-Consequential Load Loss.
4. Curtailment of Conditional Firm Transmission Service is allowed when the conditions and/or events being studied formed the basis for the Conditional Firm Transmission Service.
5. For non-generator step up transformer outage events, the reference voltage, as used in footnote 1, applies to the low-side winding (excluding tertiary windings). For generator and Generator Step Up transformer outage events, the reference voltage applies to the BES connected voltage (high-side of the Generator Step Up transformer). Requirements which are applicable to transformers also apply to variable frequency transformers and phase shifting transformers.
6. Requirements which are applicable to shunt devices also apply to FACTS devices that are connected to ground.
7. Opening one end of a line section without a fault on a normally networked Transmission circuit such that the line is possibly serving Load radial from a single source point.
8. An internal breaker fault means a breaker failing internally, thus creating a System fault which must be cleared by protection on both sides of the breaker.
9. An objective of the planning process should be to minimize the likelihood and magnitude of interruption of Firm Transmission Service following Contingency events. Curtailment of Firm Transmission Service is allowed both as a System adjustment (as identified in the column entitled 'Initial Condition') and a corrective action when achieved through the appropriate re-dispatch of resources obligated to re-dispatch, where it can be demonstrated that Facilities, internal and external to the Transmission Planner's planning region, remain within applicable Facility Ratings and the re-dispatch does not result in any Non-Consequential Load Loss. Where limited options for re-dispatch exist, sensitivities associated with the availability of those resources should be considered.
10. A stuck breaker means that for a gang-operated breaker, all three phases of the breaker have remained closed. For an independent pole operated (IPO) or an independent pole tripping (IPT) breaker, only one pole is assumed to remain closed. A stuck breaker results in Delayed Fault Clearing.
11. Excludes circuits that share a common structure (Planning event P7, Extreme event steady state 2a) or common Right-of-Way (Extreme event, steady state 2b) for 1 mile or less.
12. An objective of the planning process is to minimize the likelihood and magnitude of Non-Consequential Load Loss following planning events. In limited circumstances, Non-Consequential Load Loss may be needed throughout the planning horizon to ensure that BES performance requirements are met. However, when Non-Consequential Load Loss is utilized under footnote 12 within the Near-Term Transmission Planning Horizon to address BES performance requirements, such interruption is limited to circumstances where the Non-Consequential Load Loss meets the conditions shown in Attachment 1. In no case can the planned Non-Consequential Load Loss under footnote 12 exceed 75 MW for US registered entities. The amount of planned Non-Consequential Load Loss for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.
13. Applies to the following relay functions or types: pilot (#85), distance (#21), differential (#87), current (#50, 51, and 67), voltage (#27 & 59), directional (#32, &

Table 1 – Steady State & Stability Performance Footnotes (Planning Events and Extreme Events)
67), and tripping (#86, & 94).

The Transmission Planning Process

The transmission planning process described in Chart 1 (as well as in the FPL Open Access Transmission Tariff-Attachment K) consists of five major steps: (1) the preparation of system models, (2) the assessment of the transmission system performance to comply with NERC Reliability Standards, (3) the development and evaluation of transmission expansion alternatives, (4) the selection and approval of the preferred alternatives, and (5) the incorporation of the expansion plan into the Florida Reliability Coordinating Council (FRCC) Regional Planning Process. These different steps are described below.

STEP 1: Preparation of System Models

To prepare system models, regional load profiles must be developed for the current year and for representative years of the ten-year planning horizon (2022 through 2031). These profiles incorporate the latest available substation and system load forecasts for the FPL and Gulf Power areas. The Distribution Planning groups in each region are requested to provide Transmission Planning with historical and projected substation loads, including future distribution substations, for incorporation into the Transmission Planning models. Each year the load forecasts are benchmarked against real-time historical station peak loads for validation of the forecasts and to make adjustments to future forecasts.

Once the load profiles have been developed, they are used as input to the loadflow, fault analysis and stability models for simulation of the performance of the transmission system. Other major inputs into these programs are the generation expansion plan, generation dispatch, and the base transmission system representation including expected line and equipment performance data. The generation expansion plan modeled assumes expected dispatch profiles, typical maintenance profiles at off-peak load levels, and other power schedules (*e.g.*, firm interchange). Additionally, firm long-

term transmission service obligations are incorporated into the models. The base transmission system representation incorporates existing and planned (budgeted) facilities. Appropriate operating criteria including thermal limits, voltage limits, generator reactive limits, and transformer taps are observed in developing the models. All major utilities to which FPL and Gulf Power are interconnected are also represented in the models.

STEP 2: Assessing the Transmission System for Compliance

Planning for the FPL transmission system follows practices and criteria that are consistent and comply with the NERC Transmission Planning Reliability Standards. Standard TPL-001-4 describes scenarios to be tested and the required levels of system performance. In general, the system will remain stable and both thermal and voltage limits will be within applicable facility ratings for each of these categories:

Category P0 - Represents System performance with no contingencies and all facilities in service.

Category P1 - Represents System performance with single contingency events.

Category P2 - Represents System performance with single contingency events (fault plus loss of two or more elements).

Category P3 - Represents System performance under multiple contingencies (loss of generator unit).

Category P4 - Represents System performance under multiple contingencies (fault plus stuck breaker).

Category P5 - Represents System performance under multiple contingencies (fault plus relay failure to operate).

Category P6 - Represents System performance under multiple contingencies (loss of one element followed by system adjustments).

Category P7 - Represents System performance under multiple contingencies (common structure)

Table 1 of TPL-001-4 illustrates in more detail the specific NERC Reliability Standards mentioned above.

Using the system models developed in Step 1 and in accordance with NERC Reliability Standard TPL001-4, contingencies are simulated using loadflow and stability programs modeling snapshots of different system conditions. These contingencies consist of: (1) single events such as the loss of one transmission line section, autotransformer, or a generation unit, (2) single events with certain facilities unavailable (*i.e.*, generators), and (3) credible multiple contingencies such as the loss of all transmission lines in a common transmission corridor. The latter have a lower probability of occurrence but can result in more severe consequences.

The need for transmission system upgrades is most frequently based on potential overload or under-voltage conditions associated with Category P2 through P7 type contingencies. For each of these types of contingencies, the response of the power system is analyzed to meet initial thresholds that are consistent with the NERC Reliability Standards in terms of system performance, resulting conditions, and severity. There may be isolated cases where reliability concerns combined with other factors may justify a more conservative approach in developing alternatives than the normal planning criteria.

The transmission system in Florida is electrically unique because it is tied to the Eastern Interconnection only to the north. Additionally, the major load center in Florida is in the most southern part of Florida, containing almost one half of the forecasted load. Because of its unique characteristics, Florida has a higher exposure to voltage and system stability issues such as system separation and under-frequency load shedding, than other parts of the country. Additional criteria have been developed to deal with Florida specific reliability concerns. Specific criteria are followed for internal improvements to the FPL and former Gulf Power transmission systems as well as new

interconnections to the FPL and former Gulf Power transmission systems and are shown in the Facility Interconnection Requirements documents (posted at):

https://www.oasis.oati.com/FPL/FPLdocs/Facility_Interconnection_Requirements.pdf

https://www.oasis.oati.com/woa/docs/GULF/GULFdocs/2_Gulf_Power_FAC-001_Facility_Interconnection_Requirements_V1.0.pdf

STEP 3: Development and Evaluation of Alternatives

During the screening evaluation process, areas that do not initially meet the thresholds consistent with NERC Reliability Standards identified in Step 2 are assessed for mitigation alternatives. First, switching techniques and other operational procedures are tested. If satisfactory operational procedures are not readily available, alternatives for transmission system reinforcements are developed with input from Engineering. The alternatives are assessed using steady-state load-flow and dynamic stability analyses to identify the viability of the mitigation alternatives. Cost estimates for the viable alternatives are also obtained from Engineering. These alternatives are further evaluated taking into account pertinent factors such as reliability, electrical performance, cost, construction difficulties, and flexibility to respond to changing future conditions. The results are then vetted through a "Tollgate Process" involving, Corporate Real-Estate, External Affairs, Distribution Planning, Construction, Engineering, and other departments as necessary. This process is intended to identify and evaluate major milestones, or "Tollgates", and assign ownership that will ensure the most effective solution for project completion. Finally, during this step, previously budgeted projects are reviewed for need, timing, and electrical configuration. If necessary, revisions to the previously budgeted projects are addressed.

STEP 4: Selection and Approval

After careful evaluation of all alternative transmission system projects, and with the input provided in the Tollgate Process, a recommended transmission expansion plan is provided to management for budgeting and approval. Once approval is obtained, Power Delivery is requested to budget the projects to meet the required in-service dates.

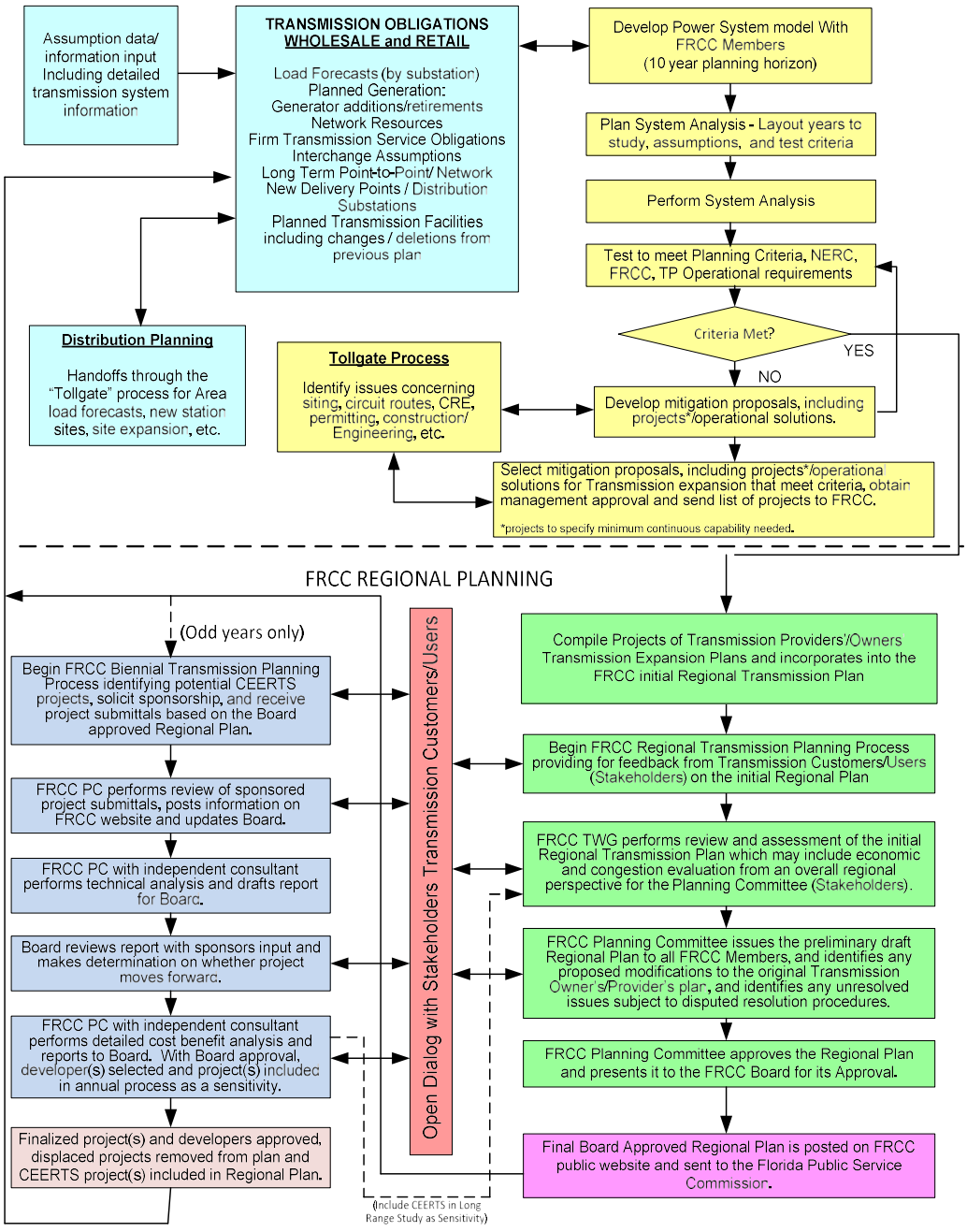
STEP 5: FRCC Regional Transmission Planning Process[1]

After the projects are approved, they are provided to the FRCC for incorporation into the Annual Transmission Planning Process portion of the FRCC's Regional Transmission Planning Process also shown in Chart 1. This process facilitates coordinated planning by all transmission providers, owners and stakeholders within the FRCC Reliability Area. The FRCC is a "Member Services Organization", under which it provides, coordinates, or administers a variety of services relating to the planning and operation of the bulk power system in the FRCC Reliability Area.

[1] As a result of the Federal Energy Regulatory Commission's (FERC) Order 1000, the FRCC's Regional Transmission Planning Process ("RTPP") has been modified and expanded to include two simultaneous processes. The Annual Transmission Planning Process ("ATPP"), which coordinates the FPL Power Delivery Expansion Plan with the expansion plans of all of the FRCC member utilities, and the Biennial Transmission Planning Process ("BTPP"), which is separate and distinct from the ATPP, in that its purpose is to analyze previously approved transmission plans and develop more Cost Effective or Efficient Regional Transmission Solutions ("CEERTS") which could ultimately impact the FPL Power Delivery Expansion Plan. The complete RTPP is a public document and is posted at: https://www.frcc.com/Planning/Shared%20Documents/Regional%20Transmission%20Planning%20Process/FRCC-MS-PL-018_FRCC_Regional_Transmission_Planning_Process.pdf

Chart 1

Transmission Planning Process Overview



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(Bates No. 000023)

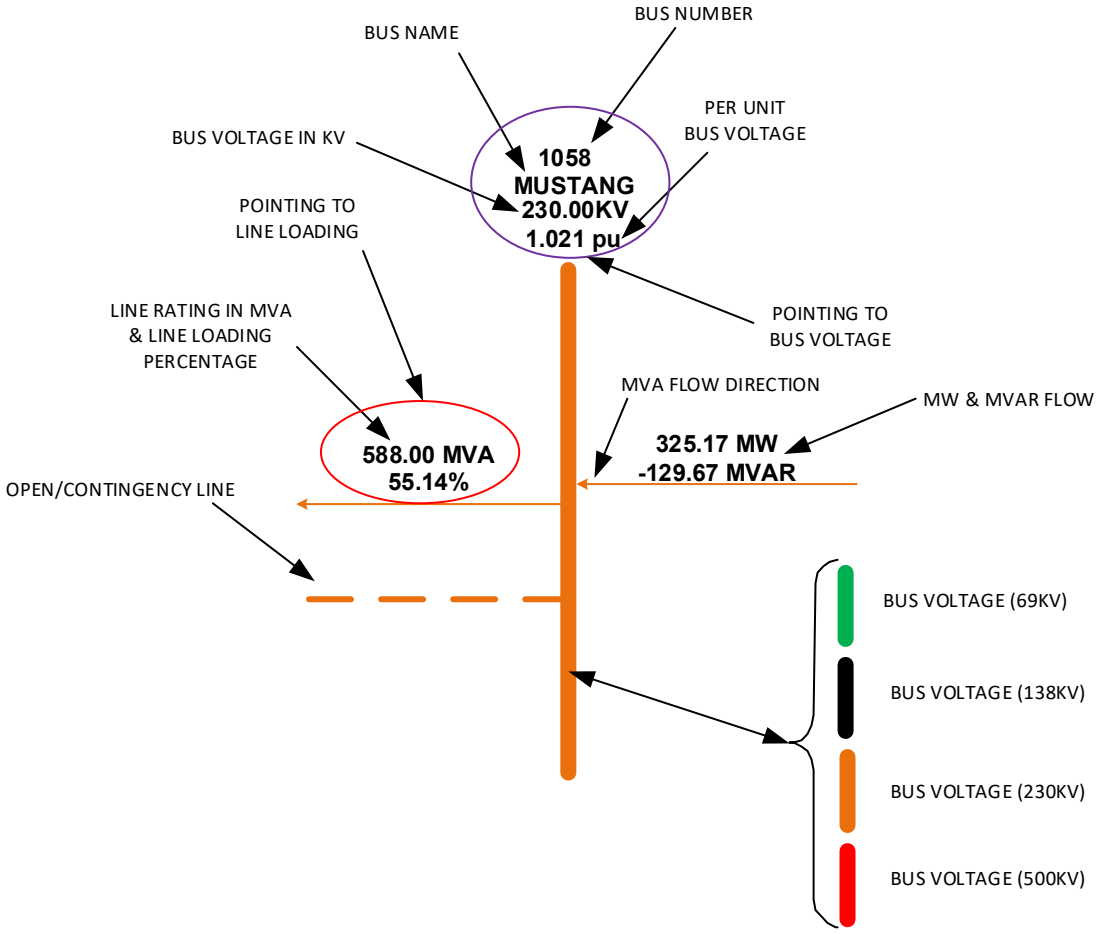
ATTACHMENT 8

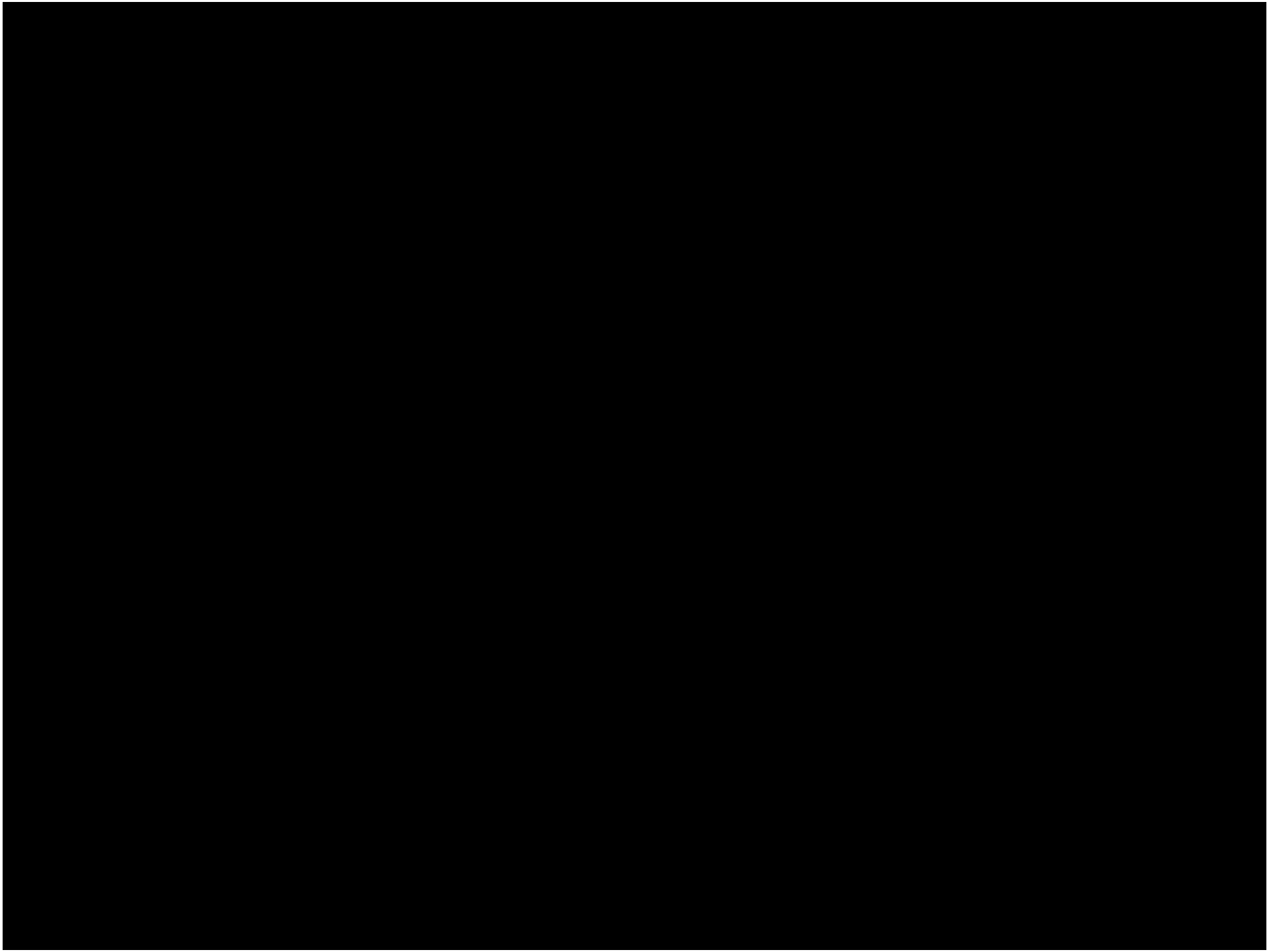
DECISION STATEMENT		Improve reliability for customers served from the existing 69kV circuit between Okeechobee and Whidden Substations. Increase east to west power transfer capabilities of the transmission network by providing an additional hardened resilient 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee. Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.								
OBJECTIVES		ALTERNATIVES: All in service dates are based on the Regional Load forecast								
		I/S YEAR		Selected Project	I/S YEAR		Alternative I	I/S YEAR		Alternative II
		2025		The SWP will primarily consist of a new 230kV transmission line extending from FPL's Sweatt substation in Okeechobee County to FPL's Whidden substation in DeSoto County. It includes the construction of approximately 21 miles of a new single 230 kV transmission line in Okeechobee County (to Basinger substation) and the conversion of approximately 59 miles of 69kV transmission line to 230kV transmission line in Okeechobee, Highlands and DeSoto Counties (subject to final certification under the Florida Transmission Line Siting Act or "TLSA"). It will also include the rebuild/conversion from 69kV to 230kV of Brighton	2025		The Alt. I (Ft. Drum-Whidden) Project will primarily consist of a new 230kV transmission line extending from FPL's Ft. Drum Substation in Indian River County, to FPL's Whidden Substation in DeSoto County. It will require the construction of approximately 92 miles (subject to certification under the Florida Transmission Line Siting Act or "TLSA") of a single circuit 230 kV transmission line in Indian River, Okeechobe, Highlands and DeSoto Counties.	2025		The Alt. II (Martin-Whidden) Project will primarily consist of a new 230kV transmission line extending from FPL's Martin Substation in Martin County, to FPL's Whidden Substation in DeSoto County. It will require the construction of approximately 87 miles (subject to certification under the Florida Transmission Line Siting Act or "TLSA") of a single circuit 230 kV transmission line in Martin, Okeechobe, Highlands and DeSoto Counties.
REQUIREMENTS		Yes	No	Information	Yes	No	Information	Yes	No	Information
Alternative must provide for reliable service to area customers		X		Improve reliability for customers served from the existing 69kV circuit between Okeechobee and Whidden Substations. Increase east to west power transfer capabilities of the transmission network by providing an additional hardened resilient 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee. Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.	X		Increase east to west power transfer capabilities of the transmission network by providing an additional hardened resilient 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee. Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.	X		Increase east to west power transfer capabilities of the transmission network by providing an additional hardened resilient 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee. Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.
Alternative Plan is feasible to construct		X		Construction is feasible with a combination of new and existing right-of-way.	X		Construction is feasible with a combination of new and existing right-of-way.	X		Construction is feasible with a combination of new and existing right-of-way. Routing challenges exist in the area of the City of Okeechobee.
DESIRES	VL	Score	VL*S	Information	Score	VL*S	Information	Score	VL*S	Information
Minimize Price (Present value of revenue requirements)	10.0	10.0	100	PVRR is estimated to be $226,428,460	6.0	60	PVRR is estimated to be $300,277,946	8.0	80	PVRR is estimated to be $236,508,694
Maximize reliability of service to customers	9.2	10.0	92	Improve reliability for customers served from the existing 69kV circuit between Sweatt and Whidden Substations by minimizing the region's exposure to load curtailment under single contingency events.	1.0	9	Does not improve reliability for customers served from the existing 69kV circuit between Sweatt and Whidden Substations. It doesn't minimize the region's exposure to load curtailment under single contingency events.	1.0	9	Does not improve reliability for customers served from the existing 69kV circuit between Sweatt and Whidden Substations. It doesn't minimize the region's exposure to load curtailment under single contingency events.
Maximize compatibility with Long range plans. Flexibility	6.1	10.0	61	Increase east to west power transfer capabilities of the transmission network.	10.0	61	Increase east to west power transfer capabilities of the transmission network.	10.0	61	Increase east to west power transfer capabilities of the transmission network.
Provides operational flexibility	5.3	10.0	53	Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.	10.0	53	Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.	10.0	53	Relieve potential overloads and low voltage conditions under contingency events. Reduce line loading on existing transmission circuits.
Minimize construction difficulties	4.9	8.0	39	Construction will consist of a single circuit 230kV line.	8.0	39	Construction will consist of a single circuit 230kV line.	5.0	25	Construction will consist of a single circuit 230kV line.
TOTAL VALUE SCORE		345			222			228		

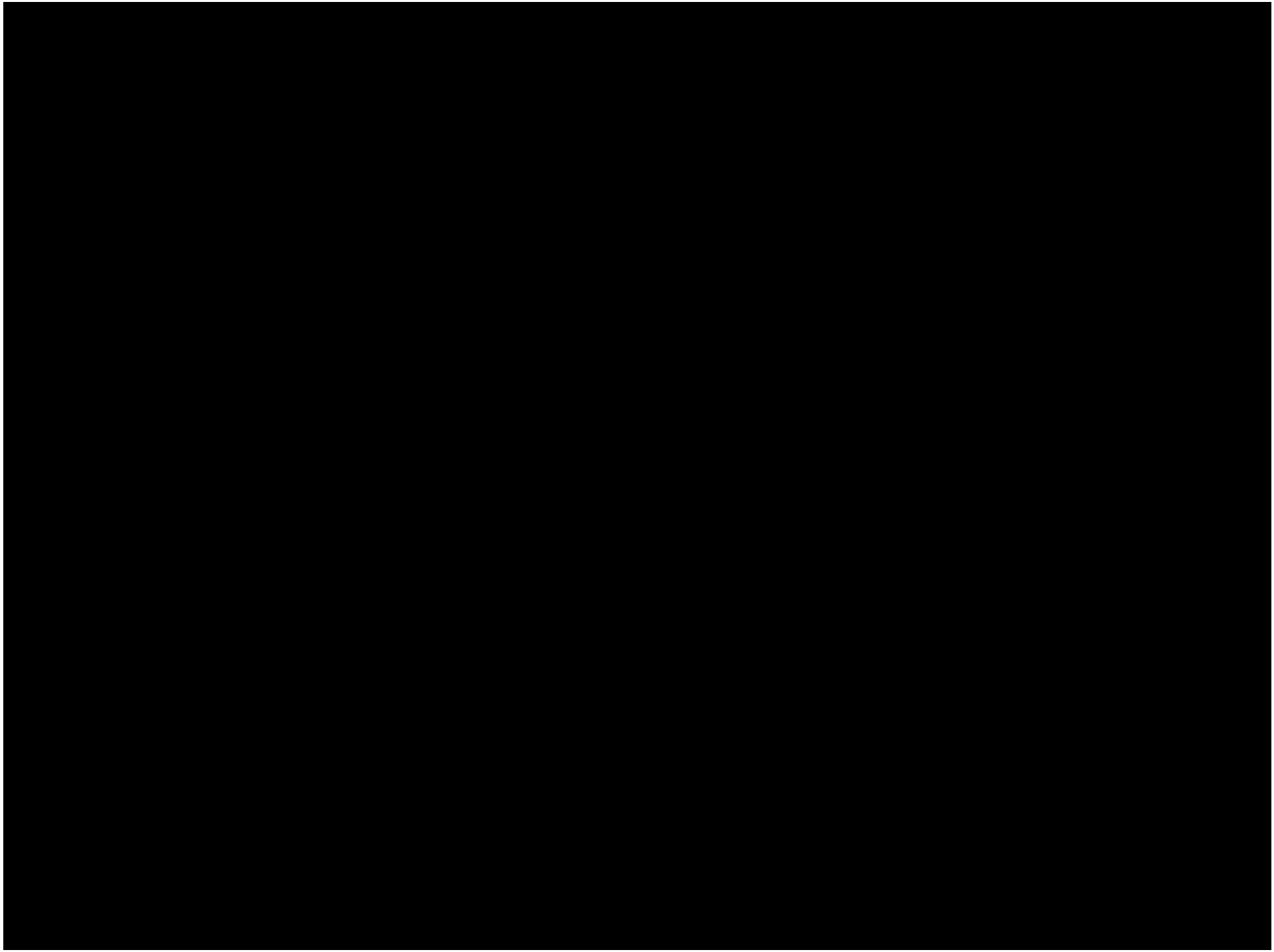
Appendix A

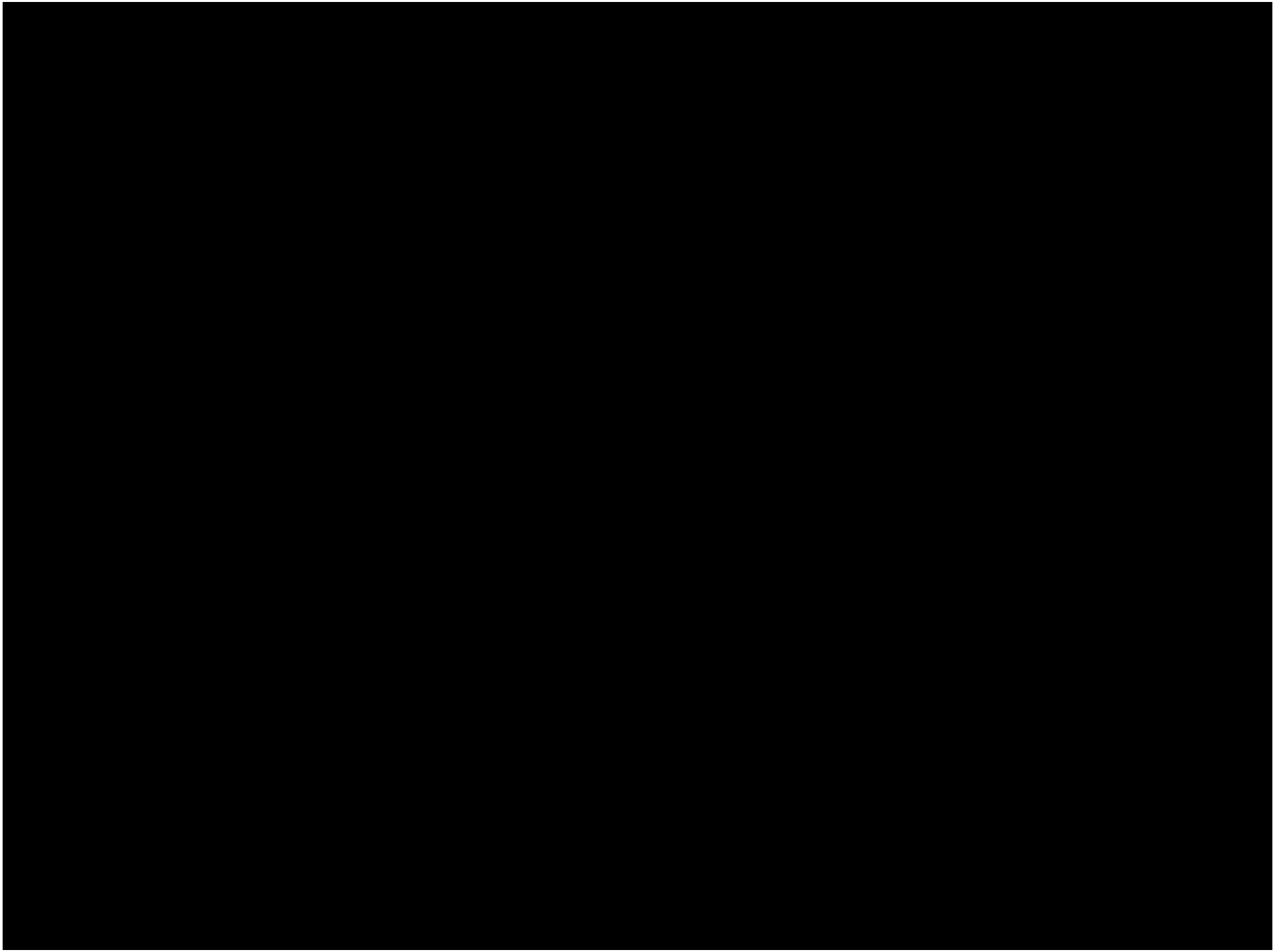
Load Flow Diagrams / Transfer Analysis

Load Flow Diagram Key





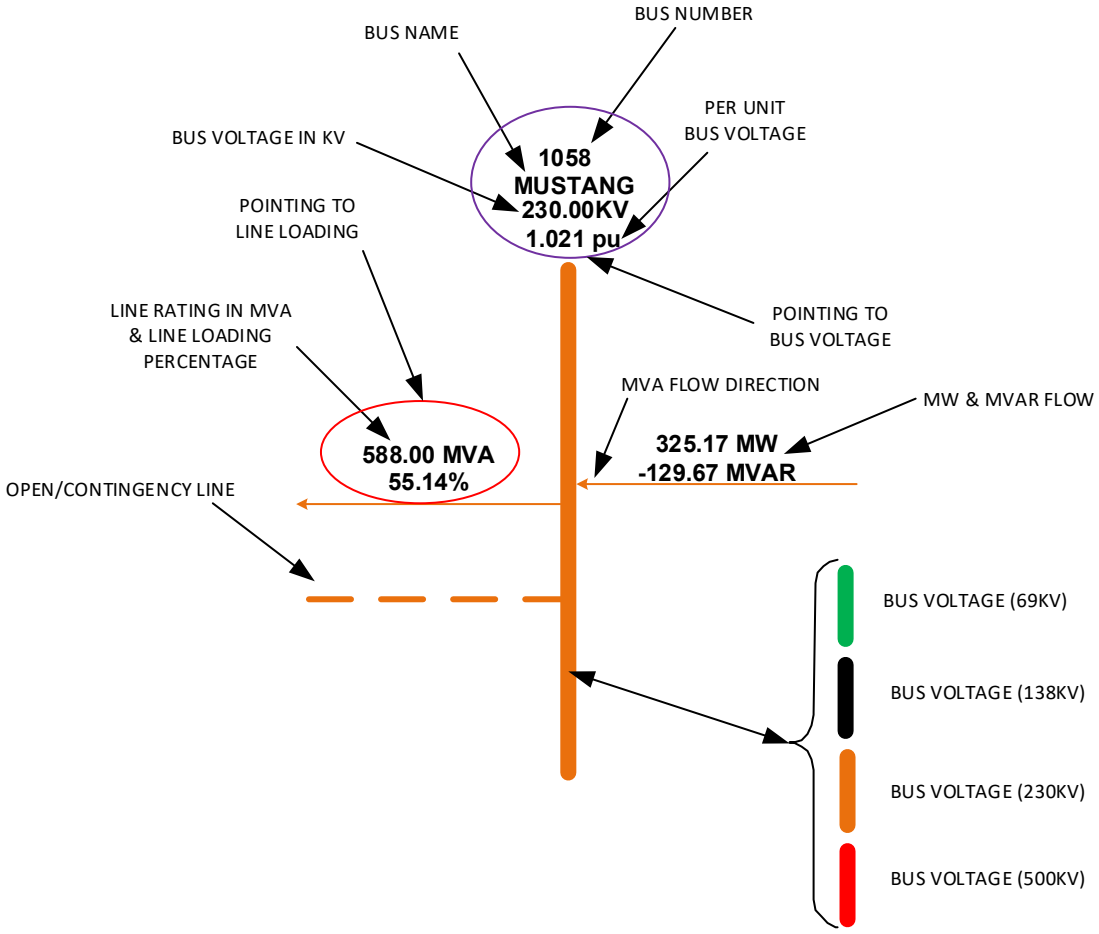


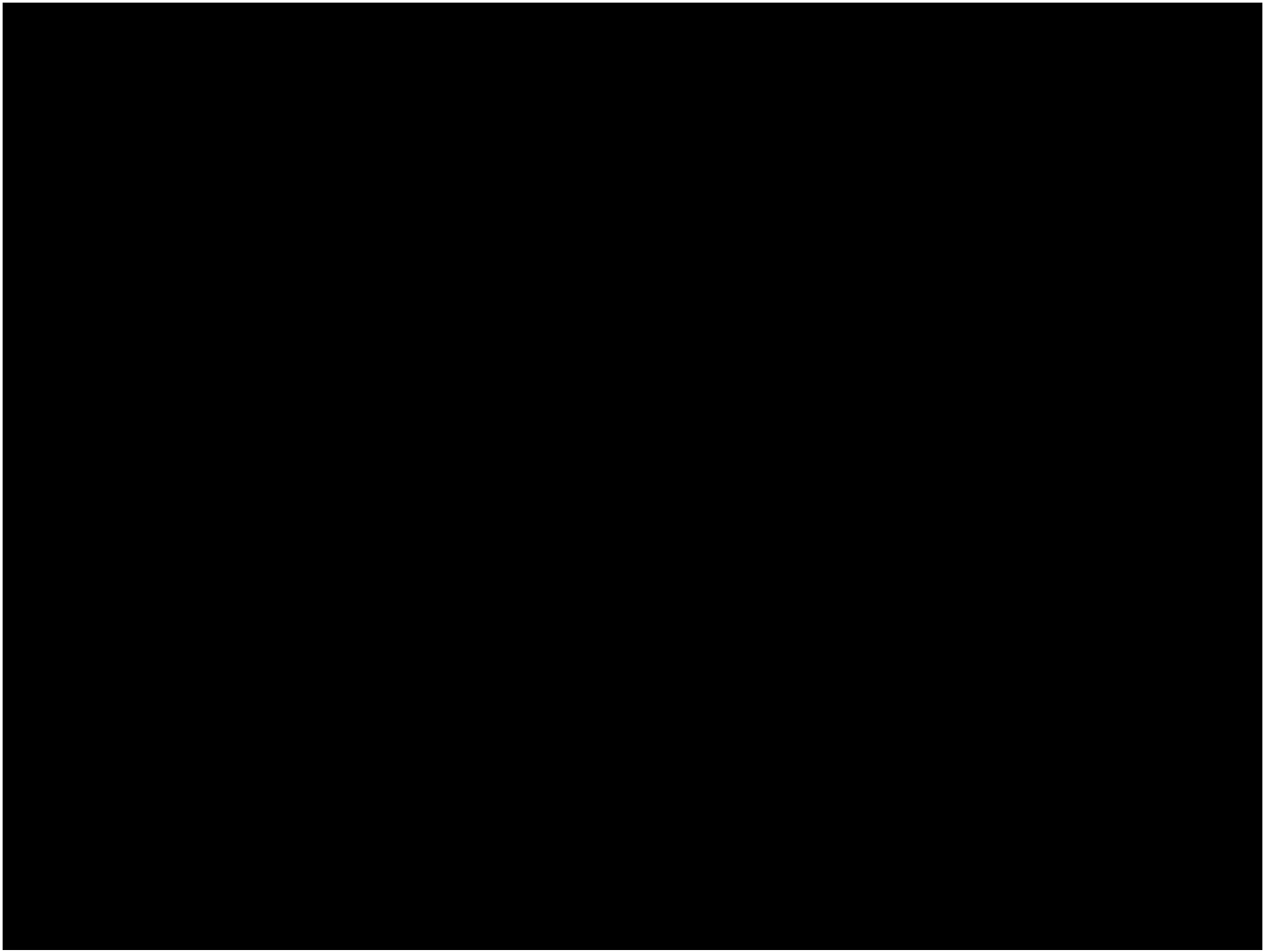


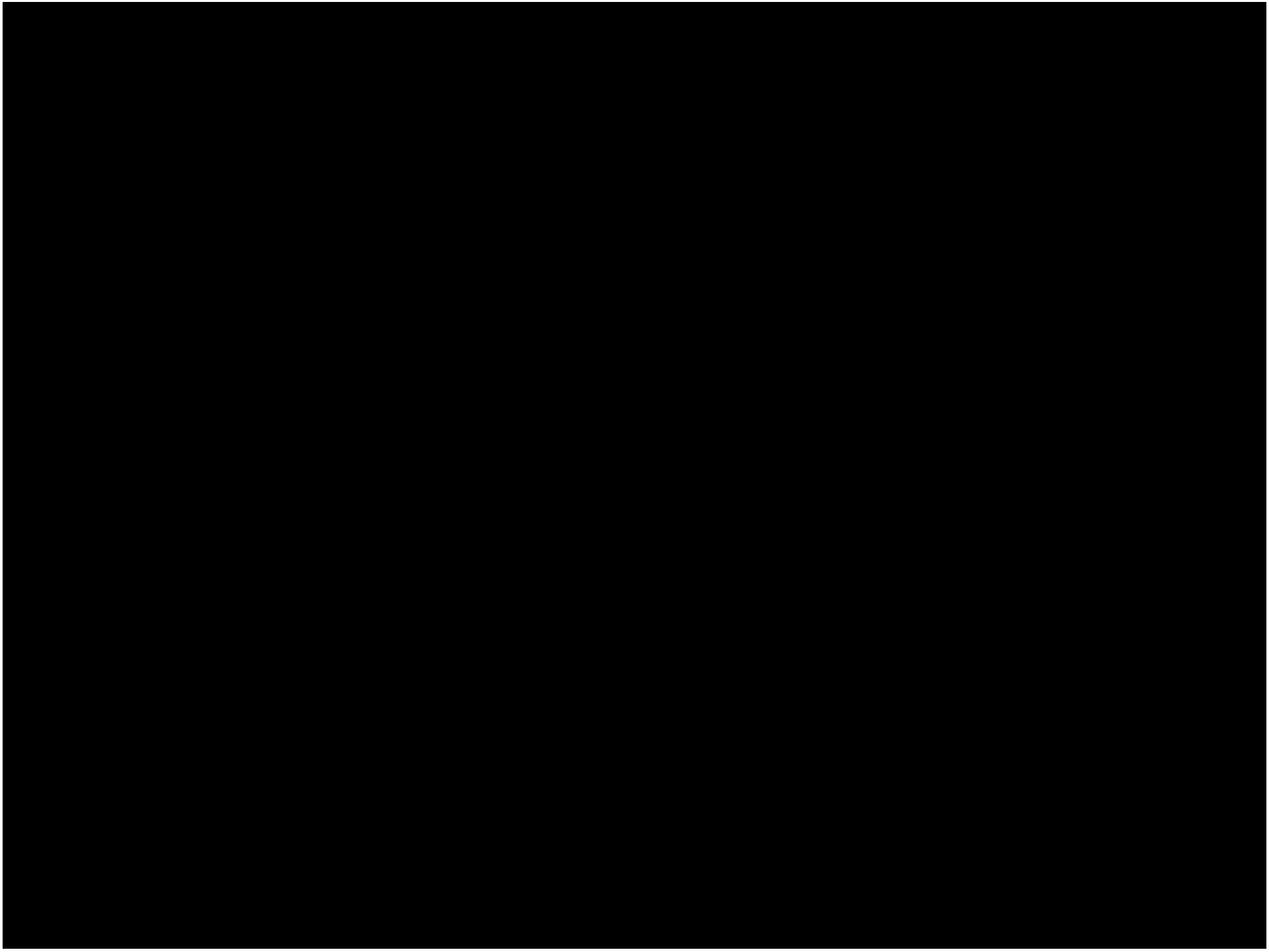
Appendix B

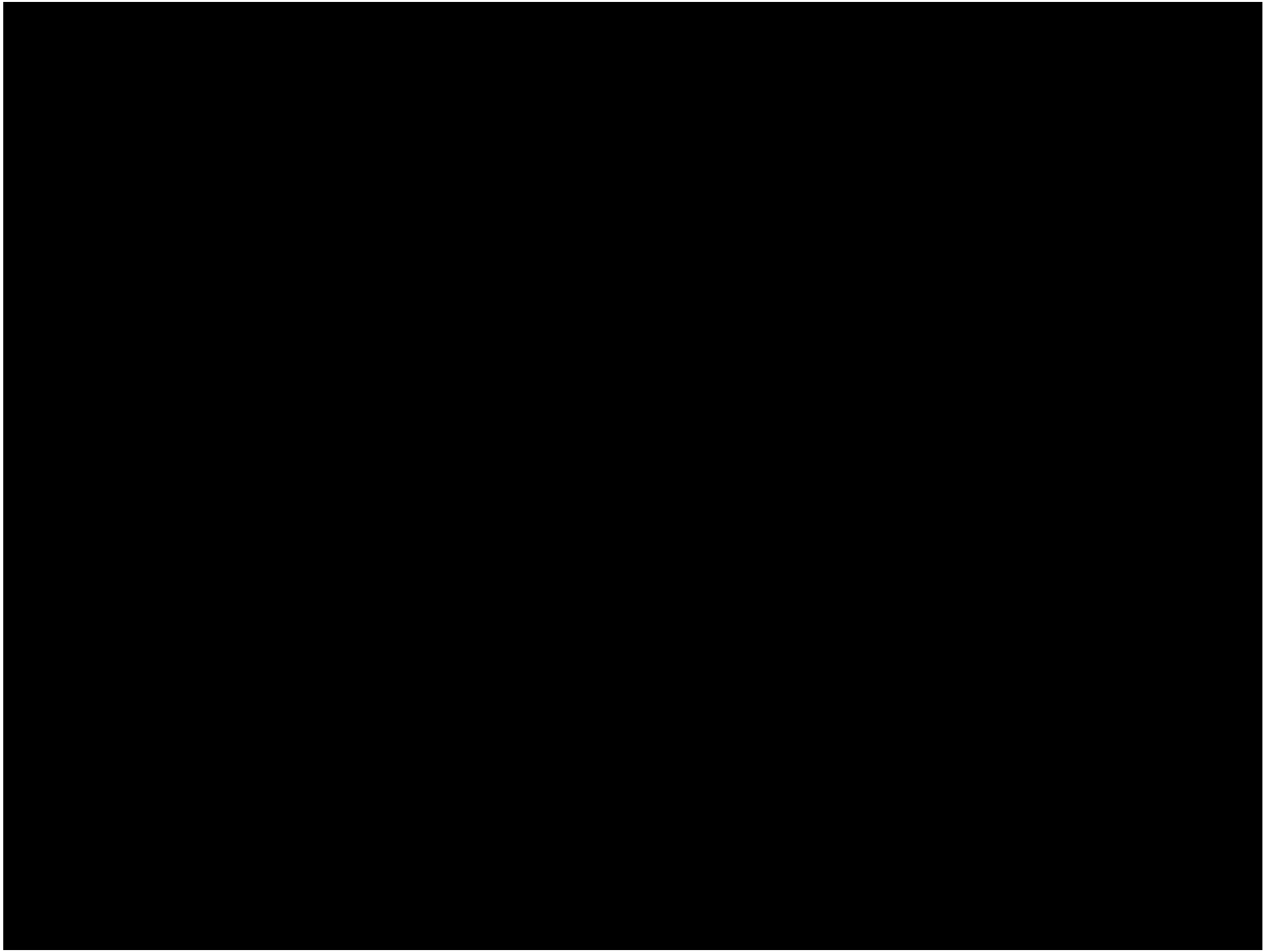
Load Flow Diagrams / Mitigate Potential System Limitations

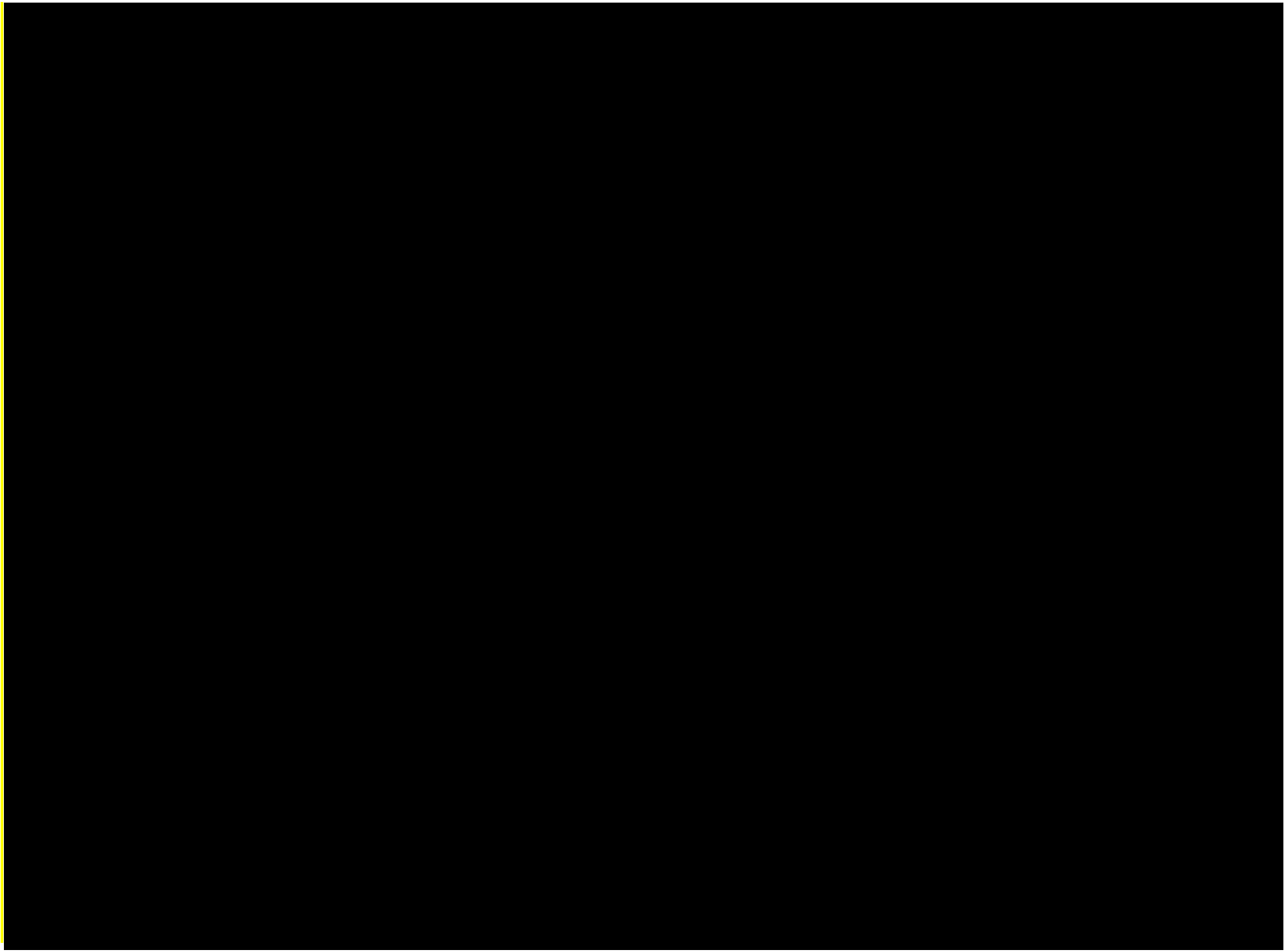
Load Flow Diagram Key

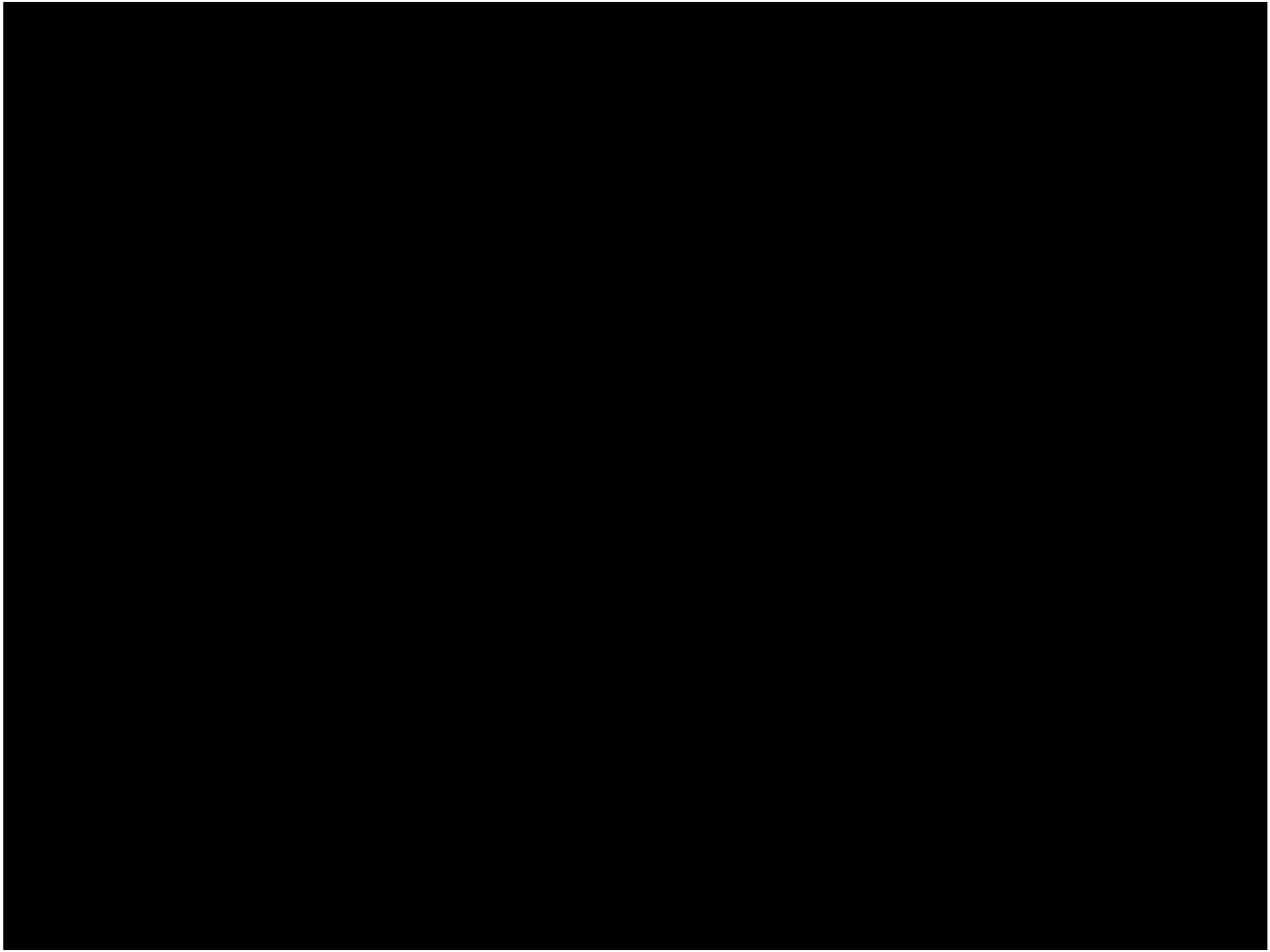


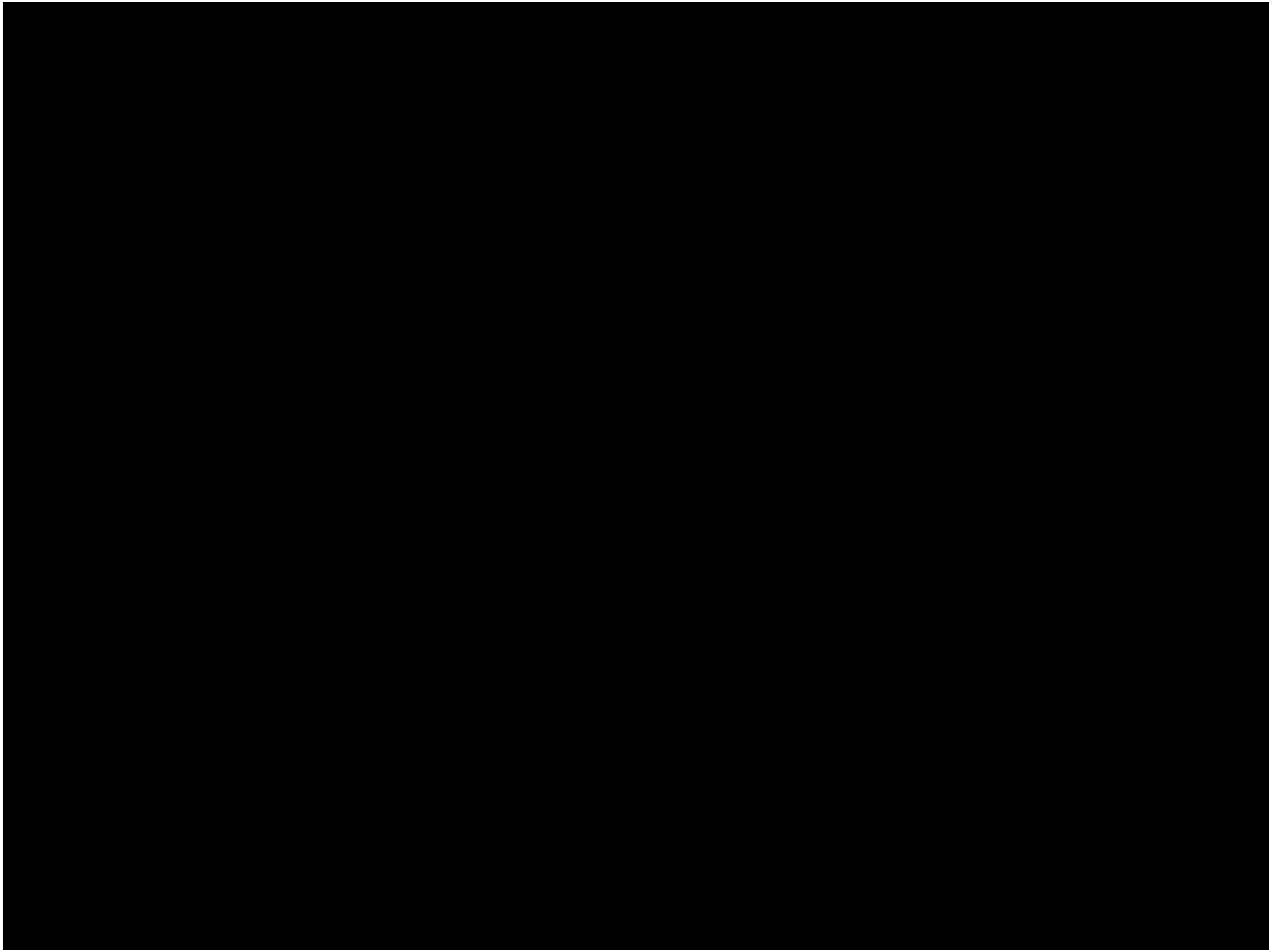








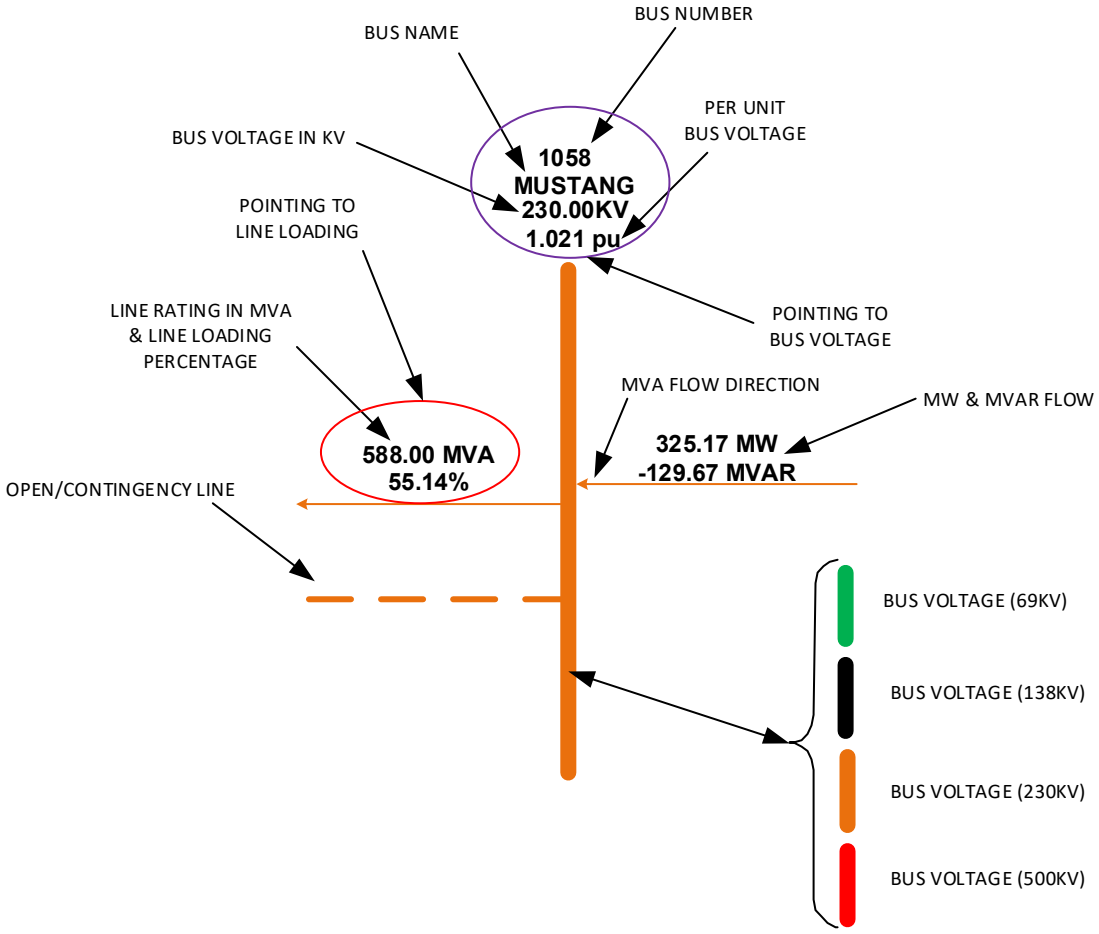


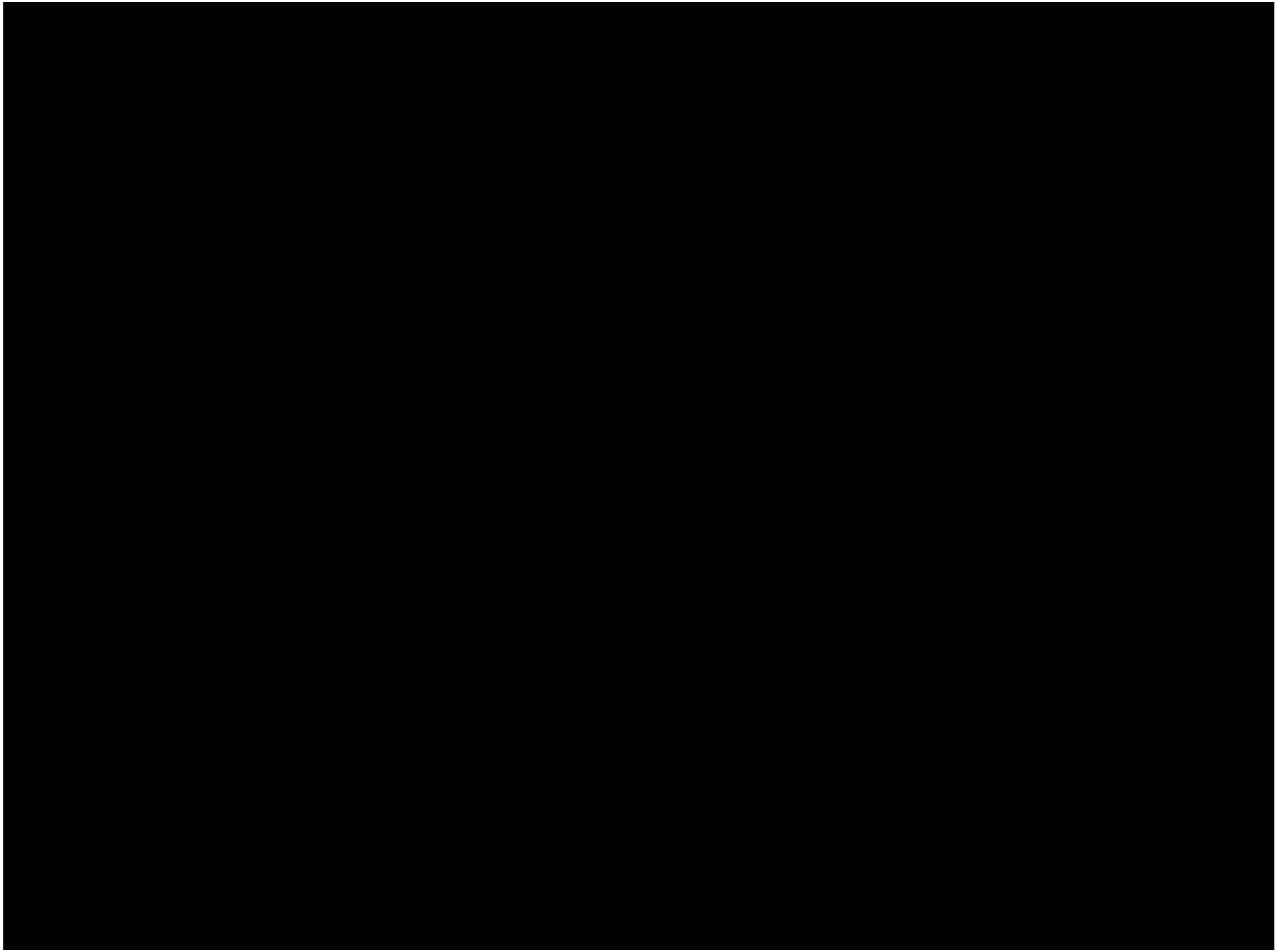


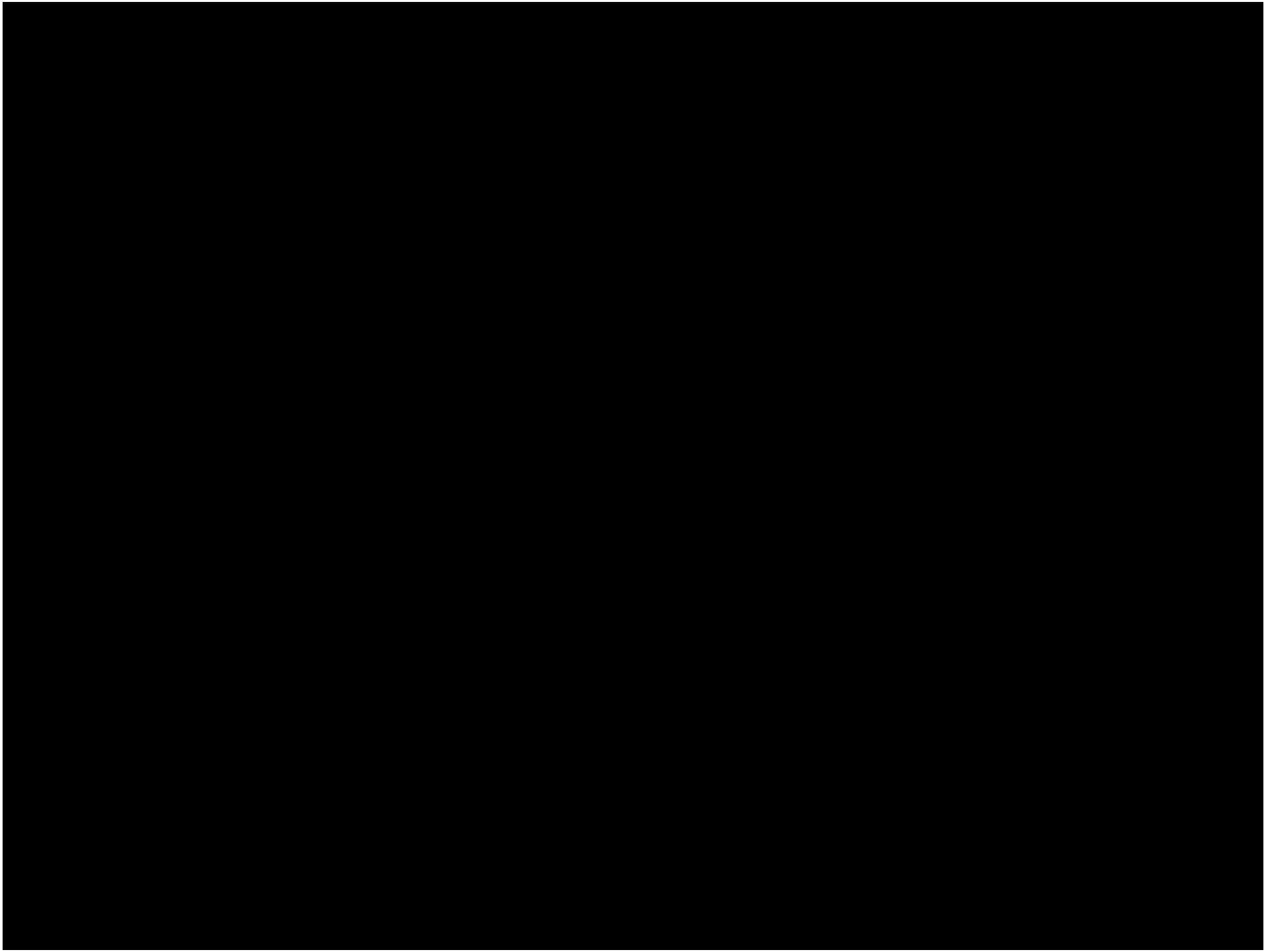
Appendix C

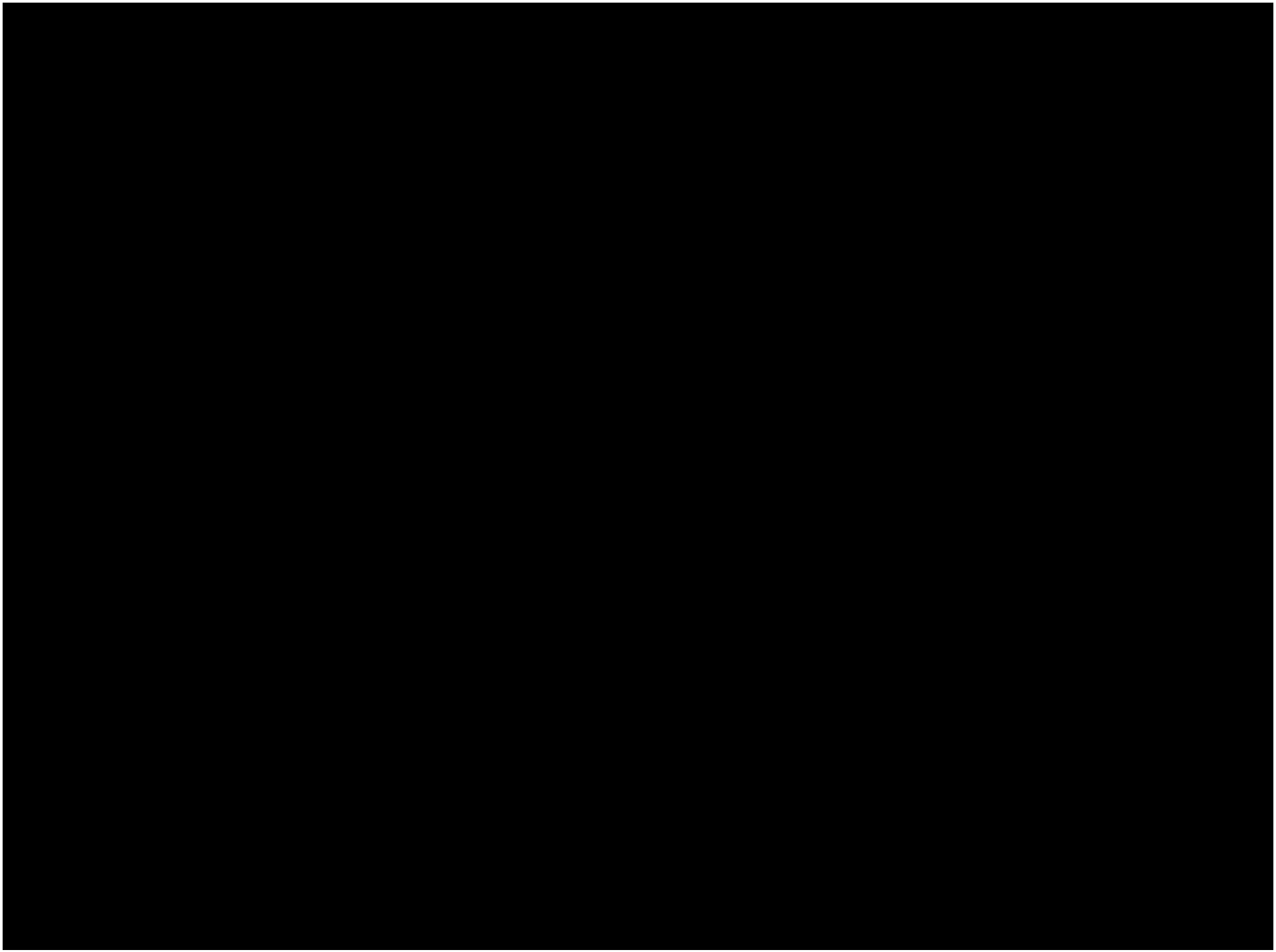
Load Flow Diagrams / Reduce Line Loading

Load Flow Diagram Key









BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF FRANCISCO PRIETO

DOCKET NO. 20220045-EI

APRIL 1, 2022

Table of Contents

I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is Francisco Prieto. My business address is 4200 W. Flagler Street, Miami, Florida 33134.

Q. By whom are you employed and what position do you hold?

A. I am employed by Florida Power & Light Company ("FPL" or the "Company") as Senior Manager, System Planning.

Q. Please describe your duties and responsibilities in that position.

A. My responsibilities include the direct supervision of engineers in the development of transmission plans for interconnection and integration of generation, transmission service for wholesale customers, and inter-utility ties ensuring compliance with North American Electric Reliability Corporation ("NERC") standards associated with transmission planning functions. I have held this position and performed these responsibilities since April of 2012.

Q. Please describe your educational background and professional experience.

A. I graduated from Florida International University with a Bachelor of Science degree in Electrical Engineering in May of 1990. From 2008 through April 2012, I worked as a Senior Manager of System Operations in charge of supervising the FPL Transmission System Operation personnel to ensure safe, reliable operation of the FPL Bulk Electric System ("BES") in compliance with NERC Reliability Standards. During this time, my primary duties and

responsibilities included the operation and coordination of the FPL Generation, Transmission, and Substation system in order to provide reliable service to FPL's customers in an efficient manner. In this role, I ensured on-going personnel training needs were met on all processes and procedures necessary to maintain situational awareness during normal and emergency conditions.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits FP-1 through FP-4, which are attached to my direct testimony.

- Exhibit FP-1 FPL Electric Facilities Map (FPL general map)
- Exhibit FP-2 Map of Study Area with Existing Facilities and SWP
- Exhibit FP-3 Sweatt-Whidden Expected Construction Schedule
- Exhibit FP-4 List of Contingencies

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to sponsor and support FPL's request for a determination of need for the Sweatt-Whidden 230kV Transmission Project ("SWP" or "Project"). Specifically, my testimony presents the following information in support of the SWP:

- General overview of the FPL transmission system
- A general description of the SWP including the design and operating voltage of the proposed transmission line, the starting and ending points of the line, the approximate cost of the SWP, and the projected in-service date

- The specific conditions, contingencies, and factors which demonstrate the need for the SWP, including a discussion of FPL's transmission planning process and the reliability benefits of the SWP
- The alternatives to the SWP that were evaluated and rejected by FPL in favor of the SWP
- The adverse consequences to FPL's electric system and customers if the SWP is delayed or denied.

Q. Please summarize your testimony.

A. FPL is proposing to build a new 230kV transmission line extending from FPL's Sweatt Substation in Okeechobee County to FPL's Whidden Substation in DeSoto County. This transmission line would convert portions of FPL's existing Okeechobee-Whidden 69kV line to address the anticipated reliability limitations beginning in 2025, which were identified in FPL's transmission planning process. An analysis of transmission alternatives resulted in FPL's selection of the project as the most cost-effective and efficient means to: (a) improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden Substations; (b) increase east to west power transfer capabilities of the transmission network by providing a resilient, hardened 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee; (c) relieve potential overloads and low voltage conditions under contingency events; and (d) reduce line loading on existing transmission circuits. The project is the most cost-effective alternative, taking into account the demand for electricity, enhancing electric

system reliability and integrity, and addressing the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state. Furthermore, the project meets area load requirements by serving existing customers and allowing for future industrial, commercial, and residential load growth. The estimated construction cost for the project is $213.5 million. The final cost of the project is subject to the ultimate line routing, length, and conditions of certification required by the Transmission Line Siting Board. FPL asserts that the estimated cost of the project is reasonable, and the transmission line will assure the economic well-being of the citizens of the state by providing electric service to projected new load in the region and improving the region's electric reliability by minimizing the region's exposure to double contingency events.

II. OVERVIEW OF FPL'S TRANSMISSION SYSTEM

Q. Please describe FPL's transmission system.

A. The FPL transmission system is comprised of approximately 9,174 circuit miles of transmission lines and 828 substations which integrate FPL's generation and distribution system. FPL transmission system interconnects with a larger transmission network that includes other utilities in Florida and the Eastern Interconnection ("EI") transmission network. The EI is a transmission network which provides electrical energy to a large area of the United States from the Great Plains to the Atlantic Ocean and also includes four Canadian provinces. The EI has multiple points of interconnection with

other utilities that enable power to be exchanged during planned and unplanned scenarios.

Q. How does FPL design its transmission system?

A. The FPL transmission system is designed to integrate all of FPL's generation resources to serve FPL's customers and to meet FPL's firm long-term transmission service obligations in a reliable and cost-effective manner. FPL plans, designs, and operates its transmission system to comply with NERC Reliability Standards. The Transmission System Planning Performance Requirements Reliability Standard (TPL-001-4) defines scenarios and expected levels of system performance that the BES should comply with in the long-term planning horizon.

Q. Please provide a brief description of the existing load and electric characteristics.

A. FPL's load characteristics consist primarily of residential and commercial load with limited industrial load. FPL's summer peak demand in recent years has been as high as 24,499 MW and the winter peak demand has been as high as 19,718 MW, serving approximately 5.7 million customers. An overview of FPL's existing electrical transmission network indicating the general location of generating plants, substations, and transmission lines is shown in Exhibit FP-1.

III. DESCRIPTION OF THE SWP

Q. Please describe the proposed SWP transmission line for which FPL is seeking a determination of need in this docket.

A. The SWP will consist of a new 230kV transmission line extending from FPL's Sweatt substation in Okeechobee County to FPL's Whidden substation in DeSoto County. It includes the construction of approximately 21 miles of a new single 230kV transmission line in Okeechobee County (to Basinger substation) and the conversion of approximately 59 miles of 69kV transmission line to 230kV transmission line in Okeechobee, Highlands and DeSoto Counties (subject to final certification under the Florida Transmission Line Siting Act or "TLSA"). The SWP will also include the rebuild/conversion from 69kV to 230kV of Brighton, Basinger (owned/operated by Glades Electric Cooperative, Inc. or "GEC"), Morgan Henderson (GEC), and Dorr Field substations.

The entire SWP will serve existing and future FPL distribution substations in FPL's service territory and increase capacity of the transmission network with a resilient, hardened 230kV line. This Project has the most cost-effective and efficient means to: (a) improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden substations; (b) increase east to west power transfer capabilities of the transmission network by providing an additional hardened, resilient 230kV circuit between the east and west areas of FPL's territory north of Lake Okeechobee; (c) relieve

potential overloads and low voltage conditions under contingency events; and (d) reduce line loading on existing transmission circuits.

Exhibit FP-2 is a map showing the SWP corridor route, along with the existing electrical facilities in the area. The corridor route is conceptual and for illustrative purposes only. The ultimate route will be selected through the TLSA process.

Q. What is FPL's timetable for licensing, design, and construction of the SWP?

A. For an indicative schedule of licensing, design, and construction, please see Exhibit FP-3.

Q. What is FPL's estimated construction cost of the SWP?

A. The estimated construction cost of the SWP is $213.5 million ($226.4 million CPVRR).

Q. What is the proposed in-service date for the SWP?

A. The projected in-service date is December 2025.

IV. FPL PLANNING PROCESS

Q. How does FPL determine the need for new transmission lines?

A. FPL identifies and analyzes the need for new transmission lines through its transmission planning process. The transmission planning process consists of five major steps: (1) the preparation of system models, (2) the assessment of the transmission system performance to comply with NERC Reliability Standards,

(3) the development and evaluation of transmission expansion alternatives, (4) the selection and approval of the preferred alternatives, and (5) the incorporation of the expansion plan into the Florida Reliability Coordinating Council ("FRCC") Regional Planning Process.

FPL plans, designs, and operates its transmission system to comply with NERC Reliability Standards. The TPL-001-4 defines scenarios and expected levels of system performance that the BES must comply with in the long-term planning horizon. In general, the system will remain stable and both thermal and voltage limits will be within applicable facility ratings for each of the contingency categories listed on Table 1 of TPL-001-4. In addition to the NERC reliability standards, FPL proposes projects in the short-term planning horizon to address additional changes across the BES. These include changes of power transfers across areas associated with transmission service, generator interconnection requests or generation retirements, potential generation-to-load area imbalance, and improvements to the overall reliability of the BES, such as providing loop service to customers and the addition of relay points on transmission lines with several distribution stations. The planned transmission system, with its expected loads and transfers, must be stable and within applicable ratings for all categories of contingency scenarios.

The design of new transmission connections should consider and minimize, to the extent practical, the adverse consequences of all contingency categories and improve system reliability.

Q. Did FPL perform any studies to determine the need for the SWP?

A. Yes. Transmission assessment studies were conducted by FPL in 2021. These studies identified potential system limitations that will require reliability improvements for Okeechobee, Highlands, DeSoto, Collier, Lee, Sarasota, and Manatee Counties. The studies also identified that by 2025, customer demand is increasing generation imbalance in the West Region of FPL's territory which can be alleviated by increasing the transfer capability into the area. Currently, the east to west power transfer capability under several contingency scenarios, such as generation unavailability and loss of the existing cross state 500kV transmission line, is limited and the existing 69kV line is operating normally open to avoid potential thermal overloads and unacceptable voltage levels.

Q. Please describe the contingencies that support the need for reliability improvements and increased transfer capacity.

A. FPL transmission assessment studies identified the contingency events shown in Exhibit FP-4 as the most critical scenarios for the Project Service Area.

V. NEED FOR THE PROJECT

Q. Please explain the need for the SWP.

A. The need for the SWP is based on the following considerations:

- The need to improve reliability for FPL customers served from the existing 69kV circuit between Okeechobee and Whidden substations;
- The need to provide an additional transmission path to increase east to west power transfer capabilities; and
- The need to mitigate potential overloads and low voltage conditions under contingency events.

The existing Okeechobee-Whidden 69kV line is operated in a radial configuration due to contingency loading limitations, with a normal open switch at Childs 69kV substation. As a result of the radial configuration, customers along this line have experienced service interruptions for single contingency scenarios in the transmission system. As discussed previously, transmission assessment studies conducted by FPL in 2021 have identified potential system limitations that will require reliability improvements for Okeechobee, Highlands, DeSoto, Collier, Lee, Sarasota, and Manatee Counties. These studies have also identified that by 2025, customer demand is increasing generation imbalance in the West Region. The east to west power transfer capability under several contingency scenarios is limited, supporting the need for an additional transmission path.

Q. Please explain the benefits of the SWP.

A. The construction of the SWP provides the following benefits to the Project Service Area:

- Provides a more reliable delivery of power to FPL customers now and into the future while addressing future customer load growth.

- Substantially mitigates customer impacts during contingency events.
- Provides resilient, hardened transmission service to the area.
- Improves voltage support in the area to efficiently and effectively serve existing and future customers in FPL distribution substations along the route of the project.
- Increases east to west power transfer capabilities of the transmission network by providing an additional circuit between the east and west areas of FPL's territory north of Lake Okeechobee. The increase in east to west transfer capability helps support customers in the populated areas of the southwest portion of the FPL service territory under several contingency situations that could occur during high customer demand periods and/or storm situations.
- Reduces line loading on existing transmission circuits.
- Reduces transmission losses by approximately 3 MW at peak load levels and approximately 2 MW at off peak load levels.
- Meets the Project Service Area's long-term reliability requirements.

Q. Is the SWP the most cost-effective alternative to meet the identified need based on the criteria in the applicable transmission line need determination statute, Section 403.537, Florida Statutes?

A. Yes. For the reasons discussed in my testimony, the SWP is the most cost-effective alternative, taking into account the demand for electricity, enhancing electric system reliability and integrity, and addressing the need for abundant,

low-cost electrical energy to assure the economic well-being of the citizens of this state.

VI. DISCUSSION OF TRANSMISSION ALTERNATIVES

Q. Did FPL consider transmission alternatives to the SWP?

A. Yes, FPL considered transmission alternatives to the SWP to meet the identified need.

Q. Please describe the transmission alternatives that were considered and explain the reasons why they were rejected.

A. FPL evaluated two transmission alternatives to the proposed SWP Project.

Alternative I: The Ft. Drum-Whidden Project consists of a new 230kV transmission line extending from FPL's Ft. Drum substation in Indian River County to FPL's Whidden substation in DeSoto County. The estimated construction cost of this alternative is $283.9 million ($300.3 million CPVRR). This alternative was rejected for the following reasons: 1) it does not provide the needed reliability improvements for all customers served from the existing 69kV circuit between Okeechobee and Whidden substations, 2) the cost of the alternative is approximately $70 million higher than the SWP, and 3) this alternative does not provide for future transmission network flexibility, nor does it substantially improve reliability in the Project Service Area because it only allows for reconfiguration of existing infrastructure on the 69kV network.

Alternative II: The Martin-Whidden Project consists of a new 230kV transmission line extending from FPL's Martin substation in Martin County, to FPL's Whidden substation in DeSoto County. The estimated construction cost of this alternative is $223.3 million (236.5 million CPVRR). This alternative was rejected for the following reasons: 1) does not provide the needed reliability improvements for all customers served from the existing 69kV circuit between Okeechobee and Whidden substations, 2) the cost of the alternative is approximately $10 million higher than the SWP, and 3) this alternative does not substantially improve reliability in the Project Service Area because it only allows for reconfiguration of existing infrastructure on the 69kV network.

VII. ADVERSE CONSEQUENCES OF DELAY OR DENIAL OF THE SWP

Q. Would there be adverse consequences to FPL's customers in the SWP Service Area if the SWP is not timely approved?

A. Yes. If the SWP is not built by December 2025, then sufficient transmission capacity would not be available to serve the existing and future industrial, commercial, and residential customers in the Project Service Area and, by virtue of the current radial transmission service configuration, system reliability and integrity would not be at the same level delivered to other FPL customers, which have normal looped transmission service.

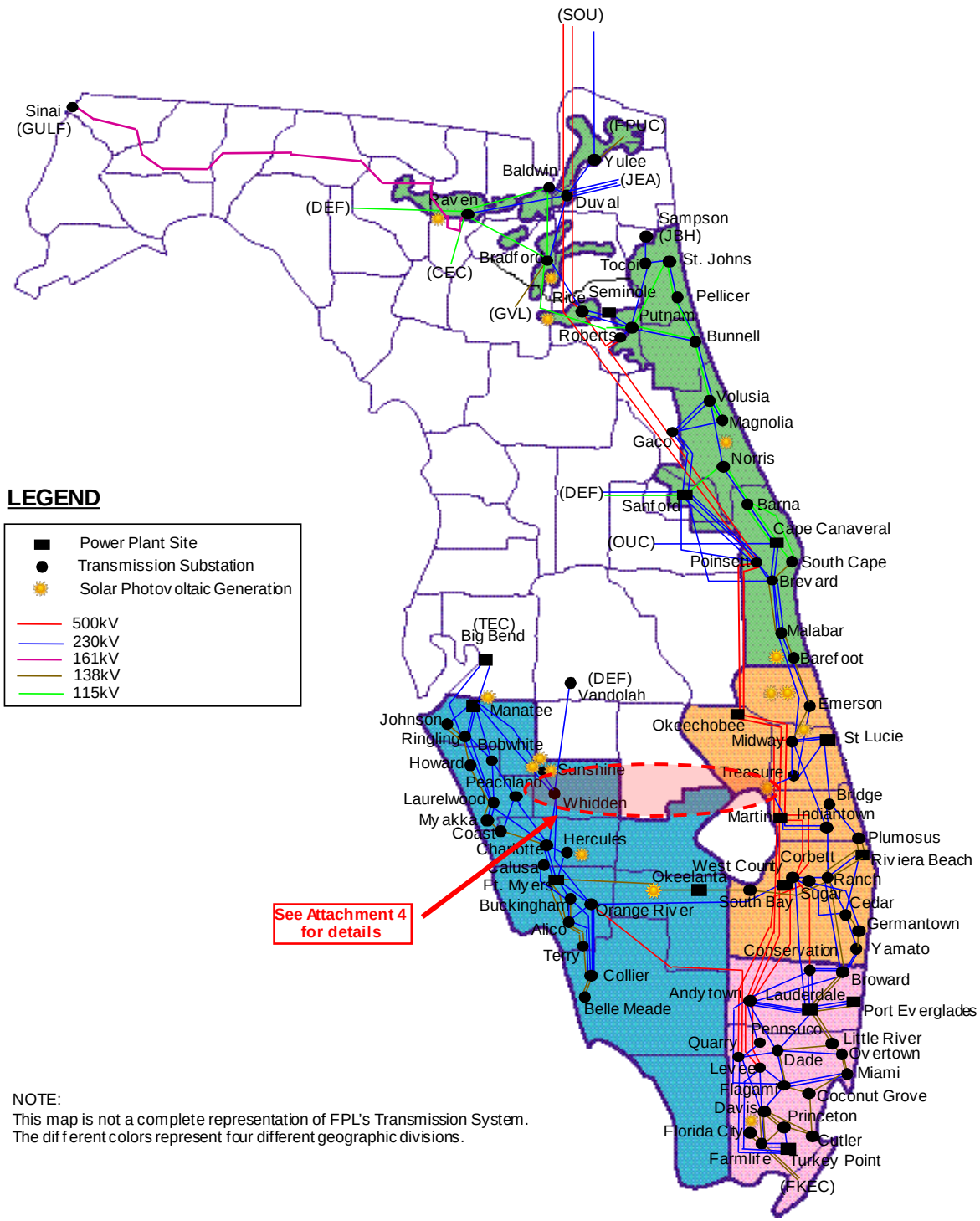
Q. Should the Florida Public Service Commission ("Commission") approve the need for the SWP?

A. Yes. For all the reasons described above, the Commission should determine that there is a need for the Sweatt-Whidden 230kV transmission line to preserve electric system reliability and integrity in the area and to maintain low-cost electrical energy for the economic well-being of the residents of Florida.

Q. Does this conclude your direct testimony?

A. Yes.

FPL Substation and Transmission System Configuration



LEGEND

- Power Plant Site
- Transmission Substation
- Solar Photovoltaic Generation
- 500kV
- 230kV
- 161kV
- 138kV
- 115kV

NOTE:
This map is not a complete representation of FPL's Transmission System.
The different colors represent four different geographic divisions.

Exhibit FP-2 is Confidential in Its Entirety

(Bates No. 000018)

Sweatt-Whidden Expected Construction Schedule

Milestone	Begin	End
TLSA/Need Determination Process (DEP must receive FPSC Need Determination approval by 8/1/22)	Apr, 2022	Apr, 2023
Transmission Line and ROW Design & Material Orders	Jan, 2022	Oct, 2023
Substation Design & Material Orders	Jan, 2022	Oct, 2023
Permitting (station & line)	Apr, 2022	May, 2024
Whidden Site Preparation	N/A	N/A
Sweatt Site Preparation	Oct, 2023	Apr, 2024
ROW Engineering/Surveying	Aug, 2022	Apr, 2023
ROW Acquisition	May, 2023	Dec, 2024
Transmission Line ROW Preparation	Jun, 2024	Mar, 2025
Substation Construction (Sweatt, Whidden)	Jan, 2024	Nov, 2025
Transmission Line Construction	Sept, 2024	Nov, 2025
In-service/Commissioning	-	Dec, 2025

Exhibit FP-4 is Confidential in Its Entirety

(Bates No. 000019)