Best Practices for Submission Processes

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Transmission Expansion Advisory Committee
Tuesday, March 06, 2024

M3 Process – Study File Submission

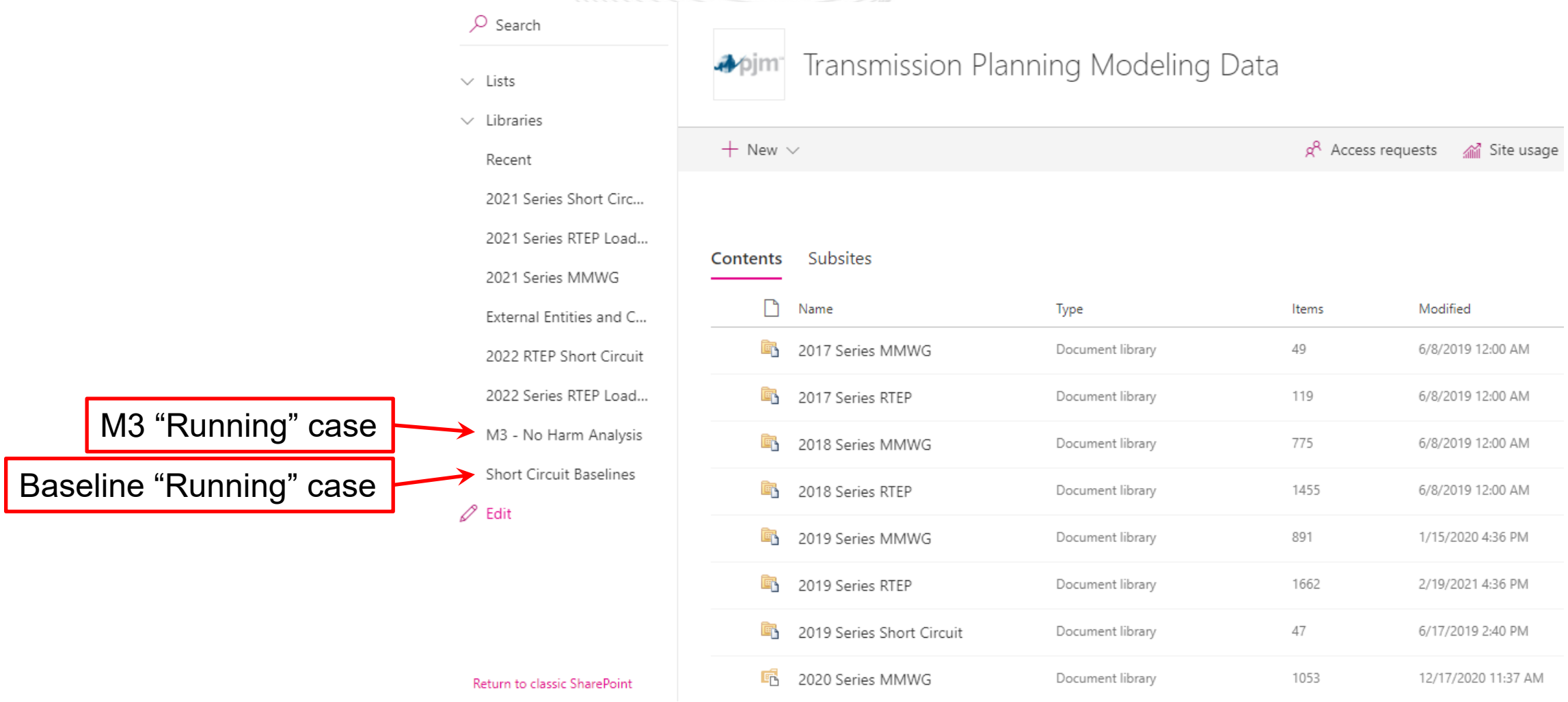
Modeling Information Requirements for Solutions Meeting

Originally presented on 8/28/2018

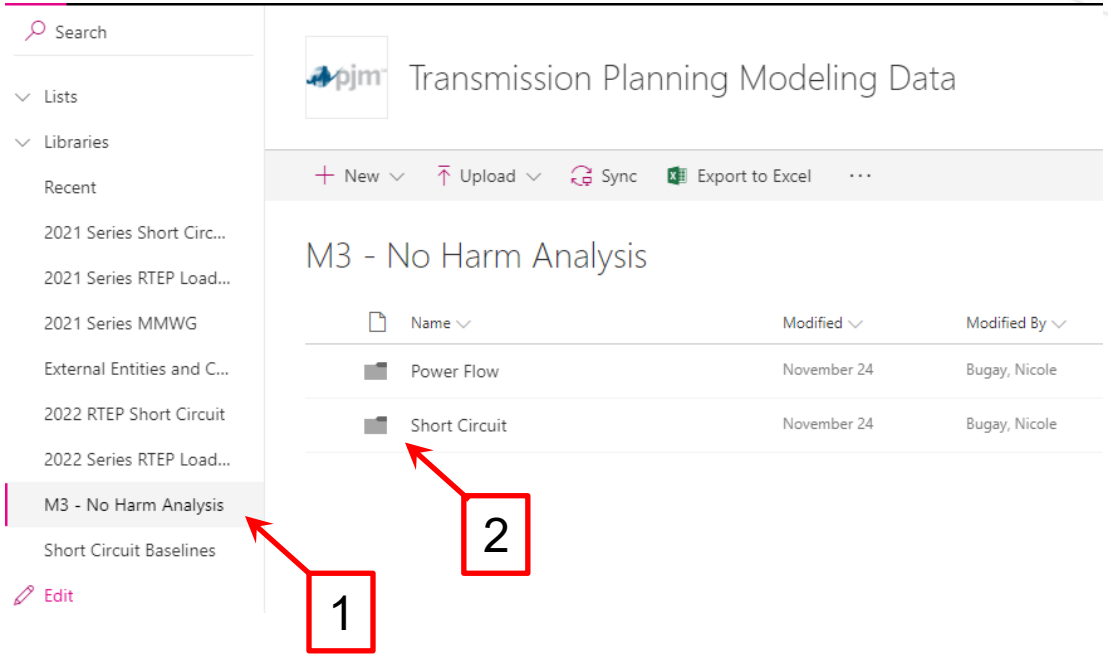
	Activity	Timing	Day	Who	How
1	Send Solutions Meeting slides and, for proposed solution, modeling information (contingency files, IDEV, etc.) to PJM	15 days before Solutions Meeting	-15	TOs and Stakeholders	E-mail to PJM
2	Finalizes Solutions Meeting slides (i.e., adds diagrams, etc.)	Upon receipt of slides, prior to posting date	>-10	PJM	Revises supplied slides
3	Post Solutions Meeting slides	10 days before Solutions Meeting	-10	PJM	Web posting of meeting materials
4	Solutions Meeting		0	All	
5	Stakeholder comments	10 days after Solutions Meeting	+10	Stakeholders	E-mail to PJM, PJM posts comments (PJM determining most efficient method)
6	Review and consider stakeholder comments	10 days after comments received	>+10	TOs	Based upon comments, TO may add information in revised slides sent to PJM and PJM re-posts
7	No Harm analysis for proposed solution	After comments for Solutions Meeting	>+10	PJM	Web posting indicating status on Solutions Meeting slide

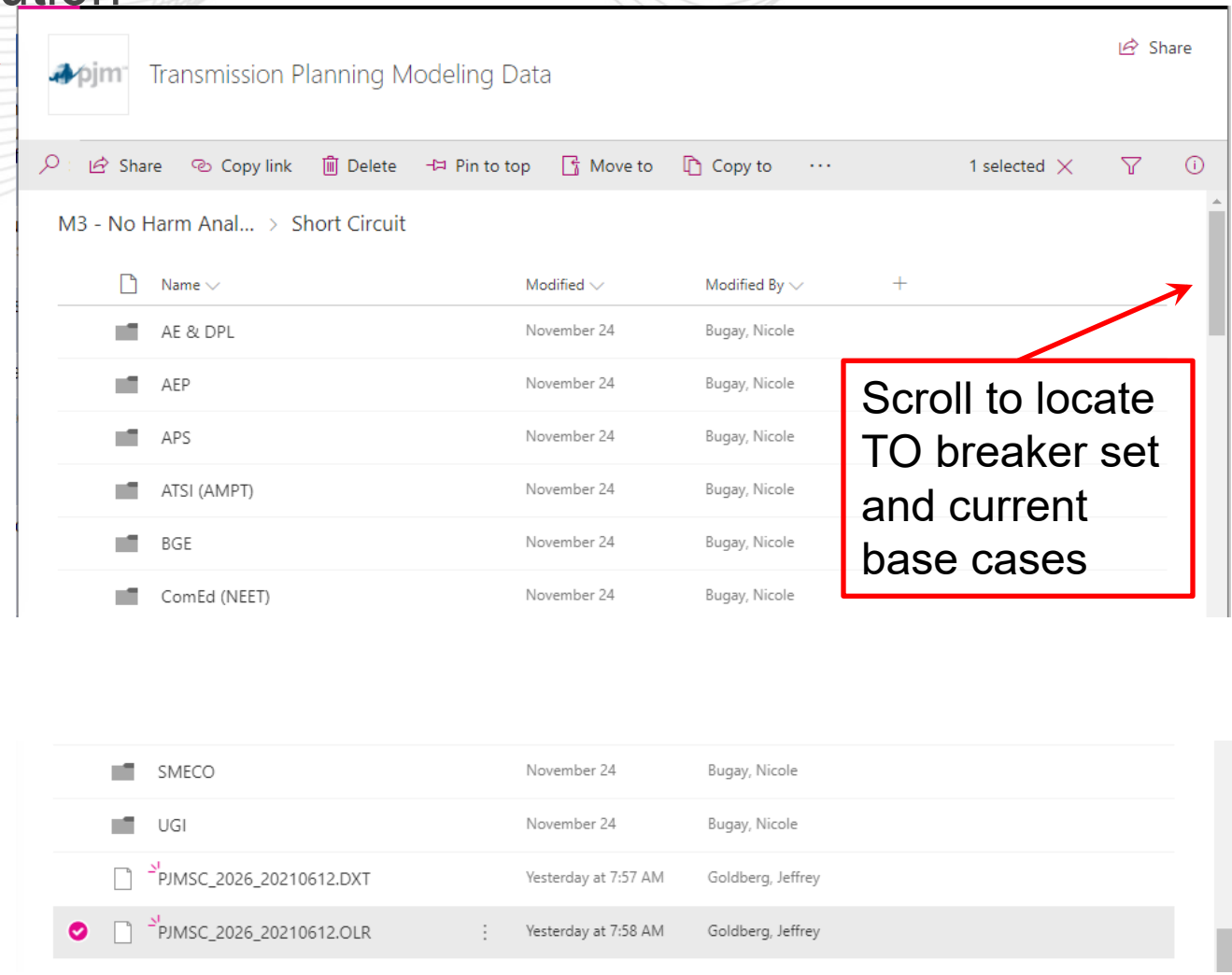
Short Circuit Modeling Reference Information

“Running” Do No Harm base cases posted on PJM Sharepoint portal



Reference the posted “Running” case to model each solution





Sharepoint –Transmission Planning Modeling Data

Home Page

https://connect.pjm.com/Transmission%20Planning%20Modeling%20Data/default.aspx

M3 – No Harm Analysis

https://connect.pjm.com/Transmission%20Planning%20Modeling%20Data/default.aspx

Short Circuit Baselines

https://connect.pjm.com/Transmission%20Planning%20Modeling%20Data/Short%20Circuit%20Baselines/Forms/AllItems.aspx

Appendix – Informational Presentations

Appendix Topics

- Preparing for the Competitive Window
- Single Line Diagram (SLD)
- Contingency Naming Convention
- Contingency Change & Idev File Submissions

Preparing for the Competitive Window

A Guide for PJM Stakeholders

Tarik Bensala

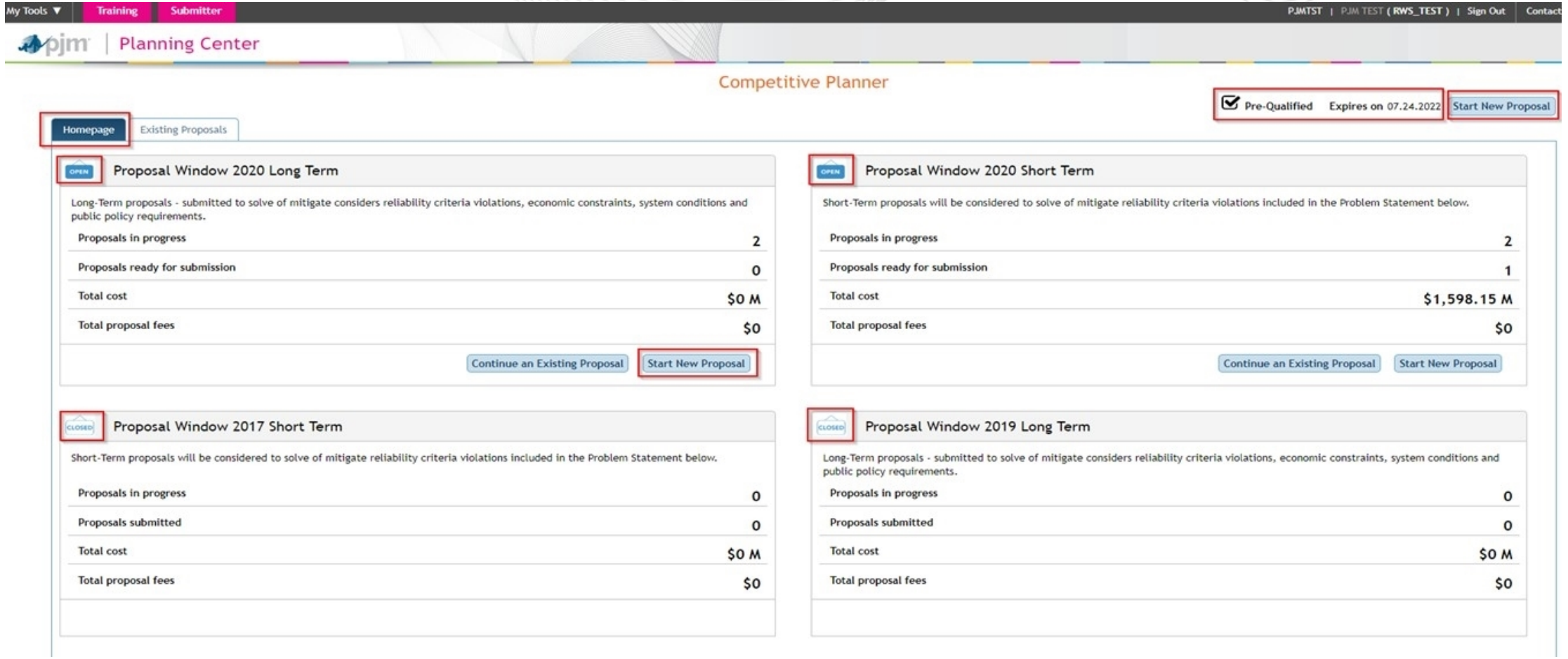
Engineer I , Transmissions Planning

Preparing for the Competitive Window

- What is the Competitive Planner Tool?
  - https://www.pjm.com/planning/competitive-planning-process
- How do you access the tool?
  - https://pjm.com/-/media/etools/account-manager/single-user-multi-account-quick-start-guide.ashx?la=en

Roles	Description
Competitive Planner Read Only	Can only read existing proposals. Cannot start, edit or submit proposals
Competitive Planner Read Write	Can start, edit or view proposals. Cannot submit proposals
Competitive Planner Submitter	Can start, edit, view, and submit proposals
SUMA accounts	Any combination of above three roles (one permitted per company)

Competitive Planning Tool - Landing Page



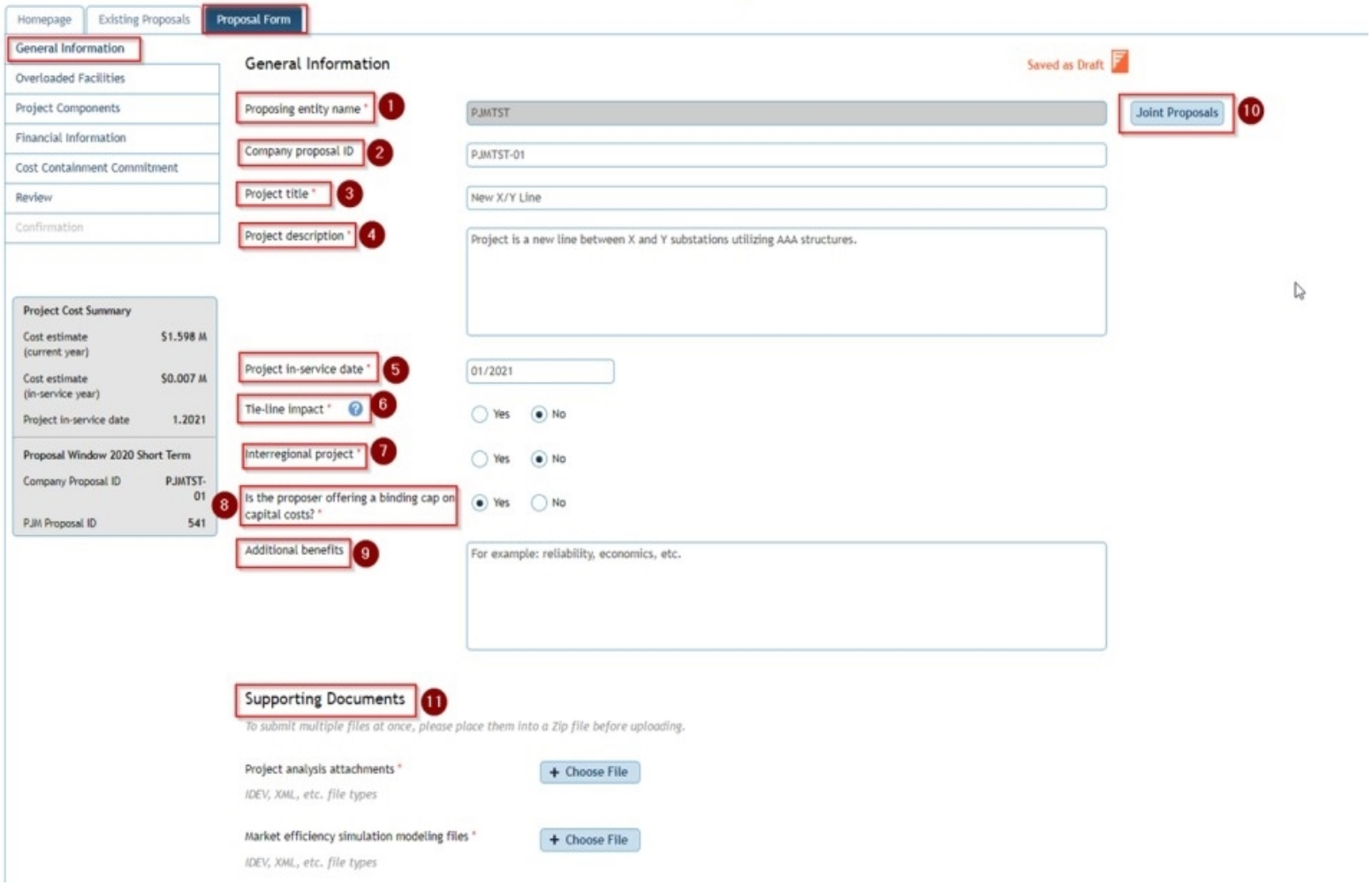
Pre Qualified Users

- An entity's eligibility to be designated to construct a project is evaluated based on its technical and engineering qualifications, including its ability to develop, construct, operate and maintain transmission within the PJM region.
- Any entity can submit a proposal regardless of Pre-Qualified status, but must be pre-qualified pursuant to OA Schedule 6, section1.5.8 in order to be designated construction responsibility.
- For more information, please see Manual 14F and the competitive planning page.

https://pjm.com/-/media/documents/manuals/m14f.ashx

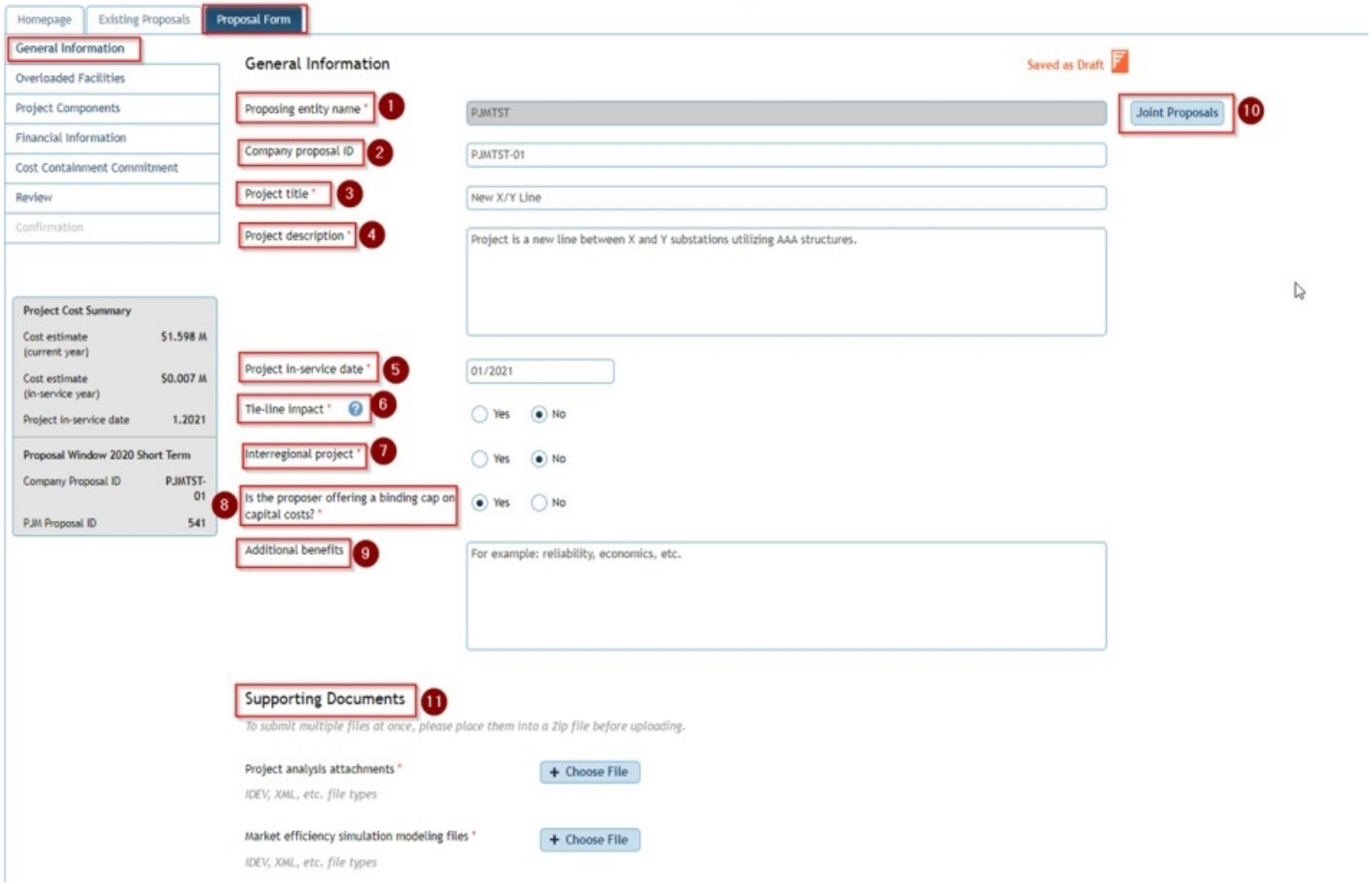
https://www.pjm.com/planning/competitive-planning-process/pre-qualification

Starting a new Proposal



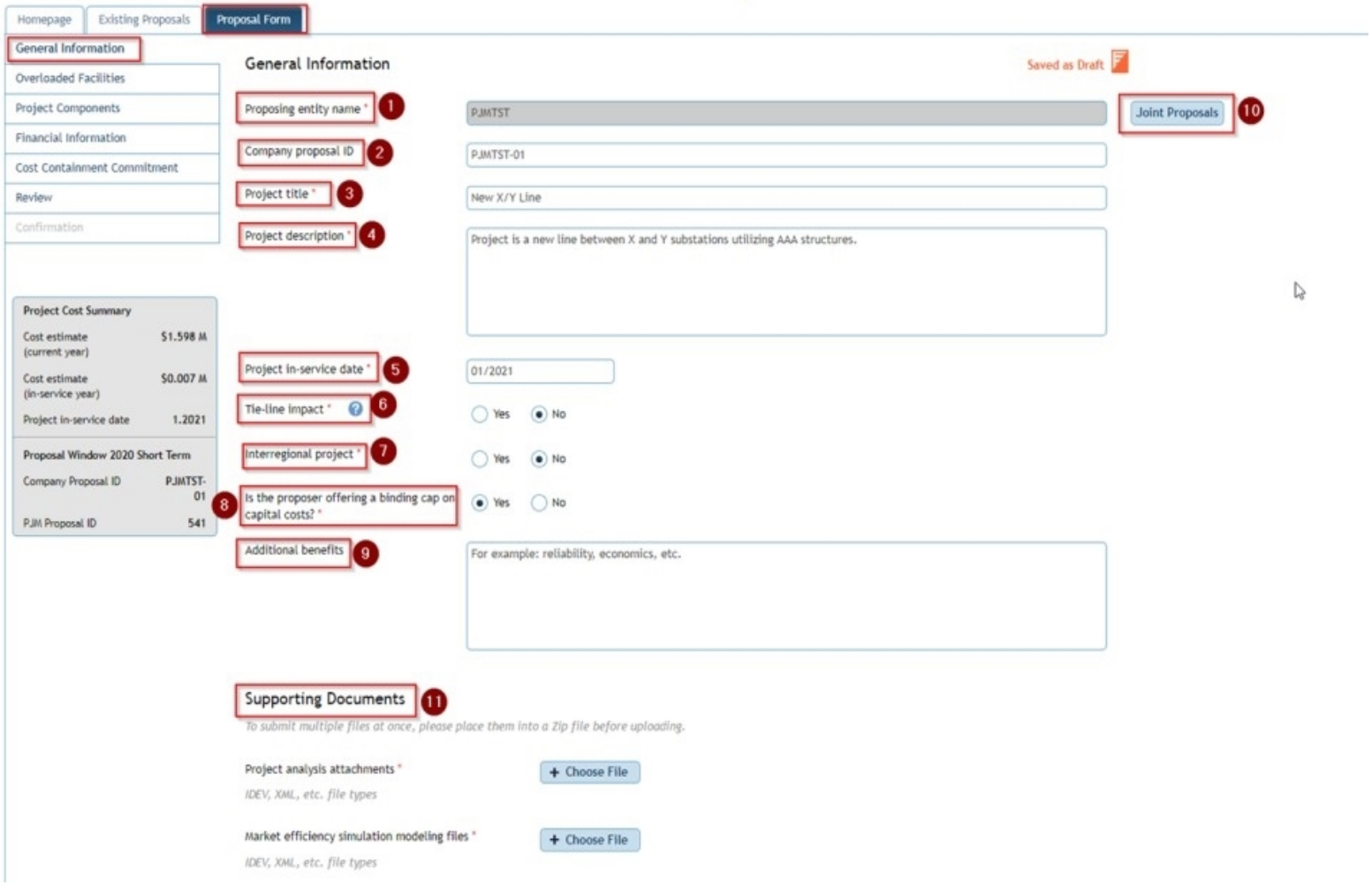
1. Proposing Entity Name (This cannot be changed by the user. This is based on the user's account and the company it is tied with.)
2. Company Proposal ID is provided by the user to allow the company to track and identify their submittals
3. Project Title (**Do not use your Company Name or any CEII Material in the Title**)
4. Project Description that gives a general scope of the project
5. Projected In-service Date
6. Tie-Line Impact (Please check this if the proposal or a component of the proposal span two PJM Transmission Owner Zones)
7. Interregional Project (Please check if this project is being proposed as a solution to a cross-border issue e.g. PJM to MISO)

Starting a new Proposal



8. Indicate if any Cost Containment Commitment is being proposed, if yes a detailed description is required under the *Cost Containment Commitment* heading
9. Please identify any additional benefits to the projects (e.g. Solving more violations, reliability, economic, resilience, etc.)
10. Joint Proposal, if your project falls under this, one party **must** be the contact with PJM and the joint parties will determine the Joint Proposal ID

Starting a new Proposal



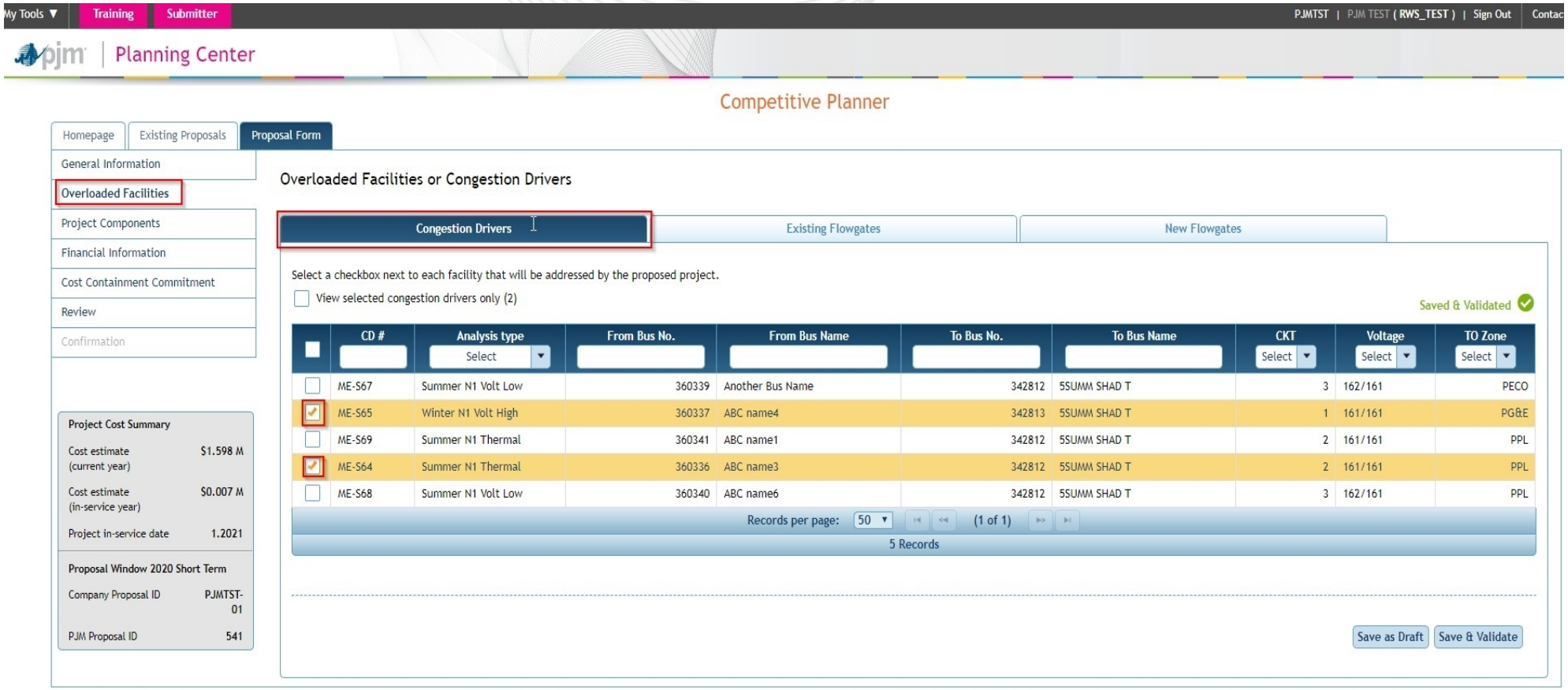
11. Supporting Documents

Reminder, please identify each file with a unique identifier. Do not label these files with the same name. Please bundle these into one ZIP file if there are multiple files being posted at once.

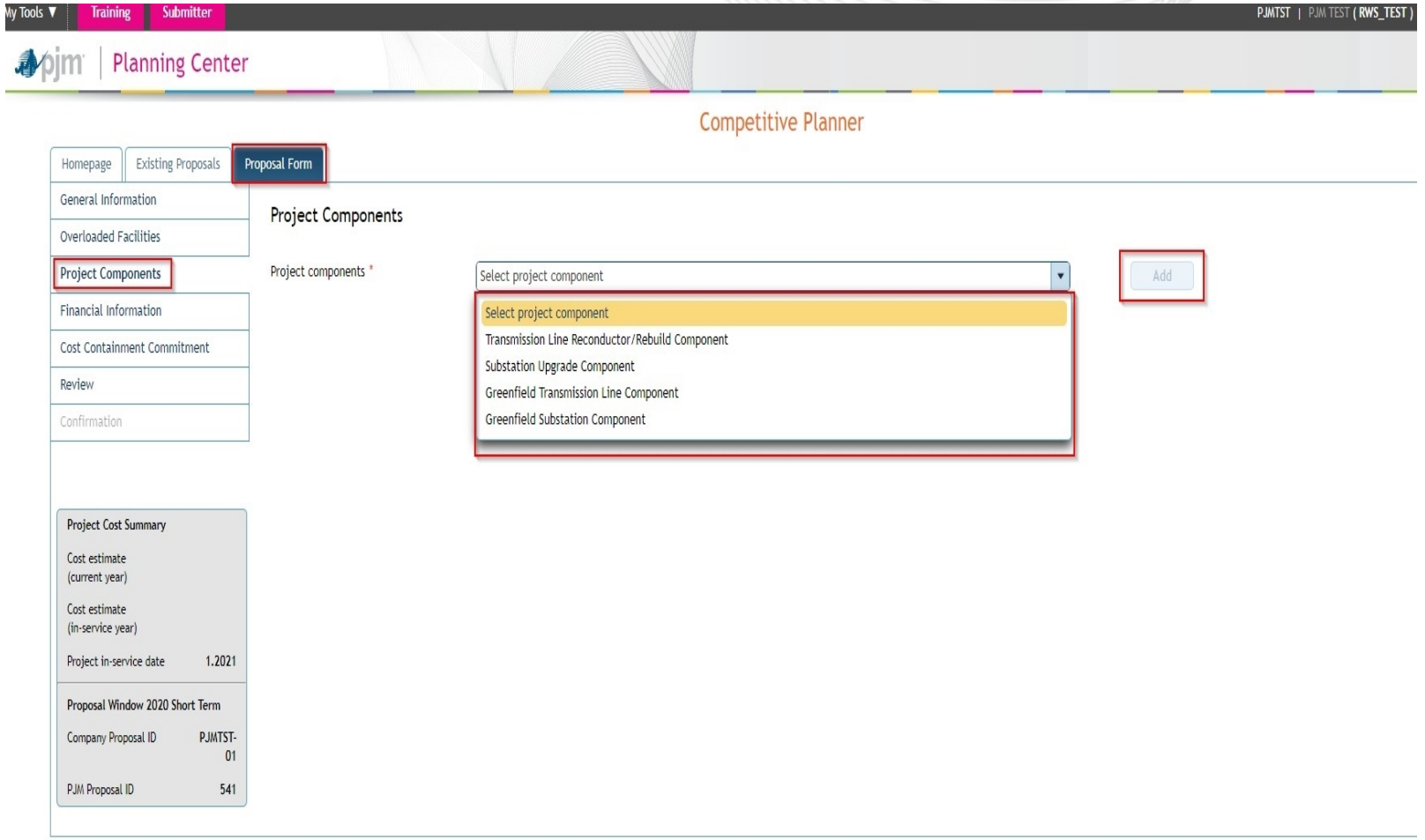
The information must be organized in the ZIP folders for Project Analysis Files and Market Efficiency Technical Files as separate ZIP folders as listed below:

- Project Analysis Files
  - Powerflow files (.Idv, .Raw, .Sav)
  - Short Circuit Files (.Chf, .Dxt)
  - Contingency Changes (Include all new, modified, and removed)
  - One Line Diagrams (Before and After)
- Market Efficiency Technical Files
  - Any Promod file (Eve, Xml, Lib, Dat, Pff, Promod Simulation Results)
  - BC Ratios in Excel Format
  - Powerflow files (.Idv, .Raw, .Sav)

Congestion Drivers/Flowgates

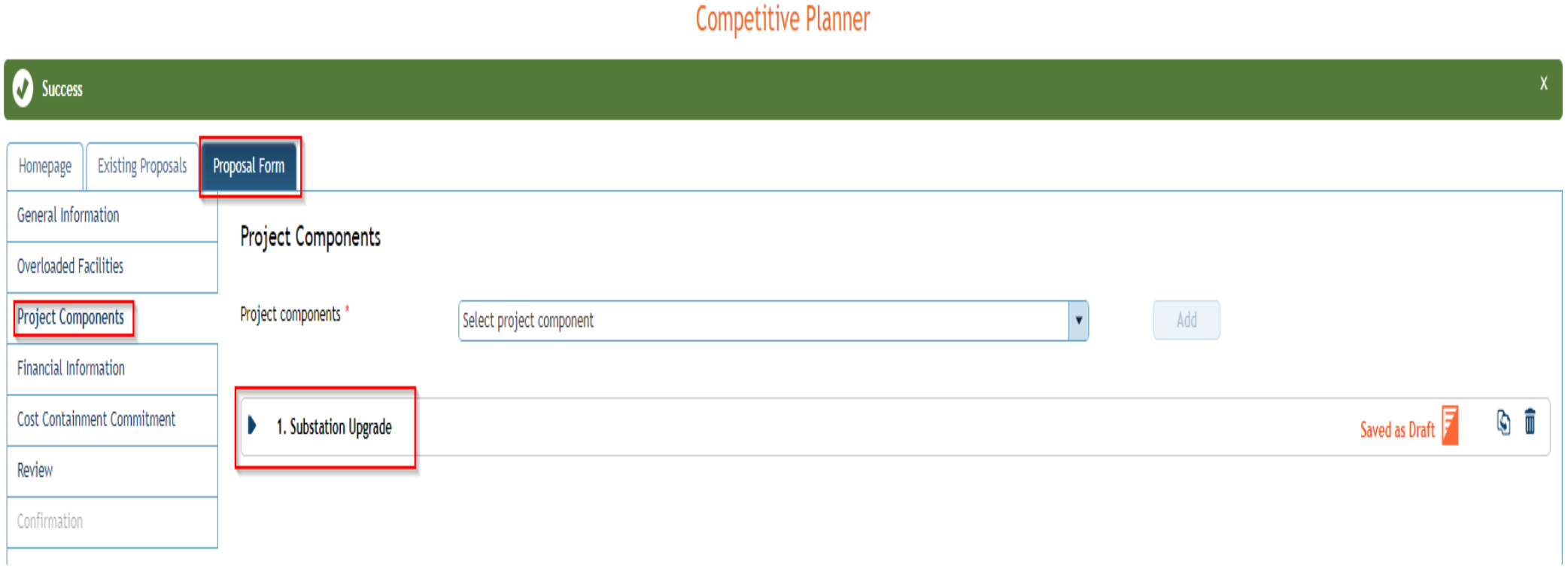


Project Components

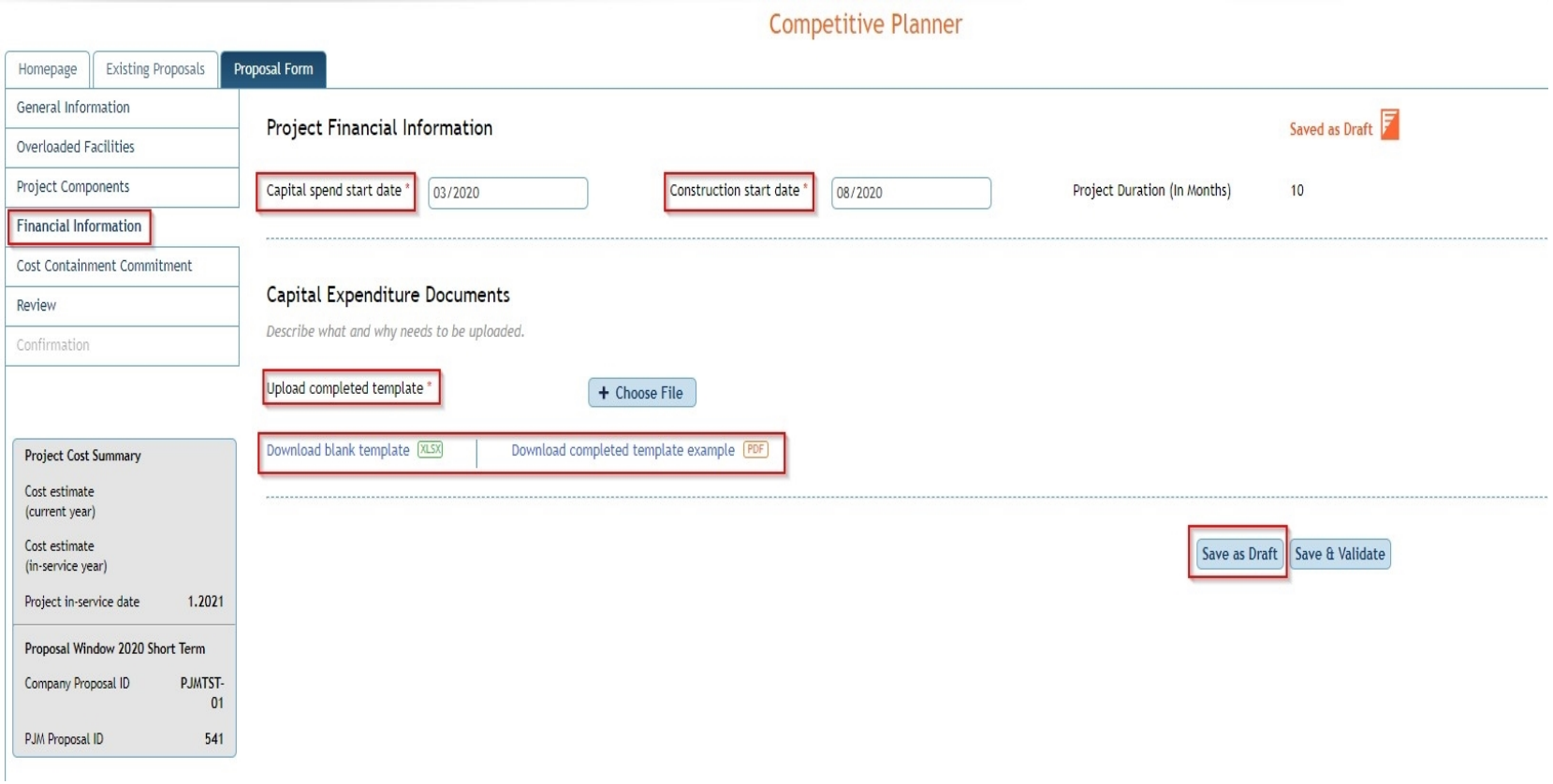


- Describe the scope of the work for each major project component
- Provide a project cost breakdown by the indicated categories for each component
- Provide an in-service year component project total cost for Market Efficiency projects
- Identify the entity designated to build the component

Project Components

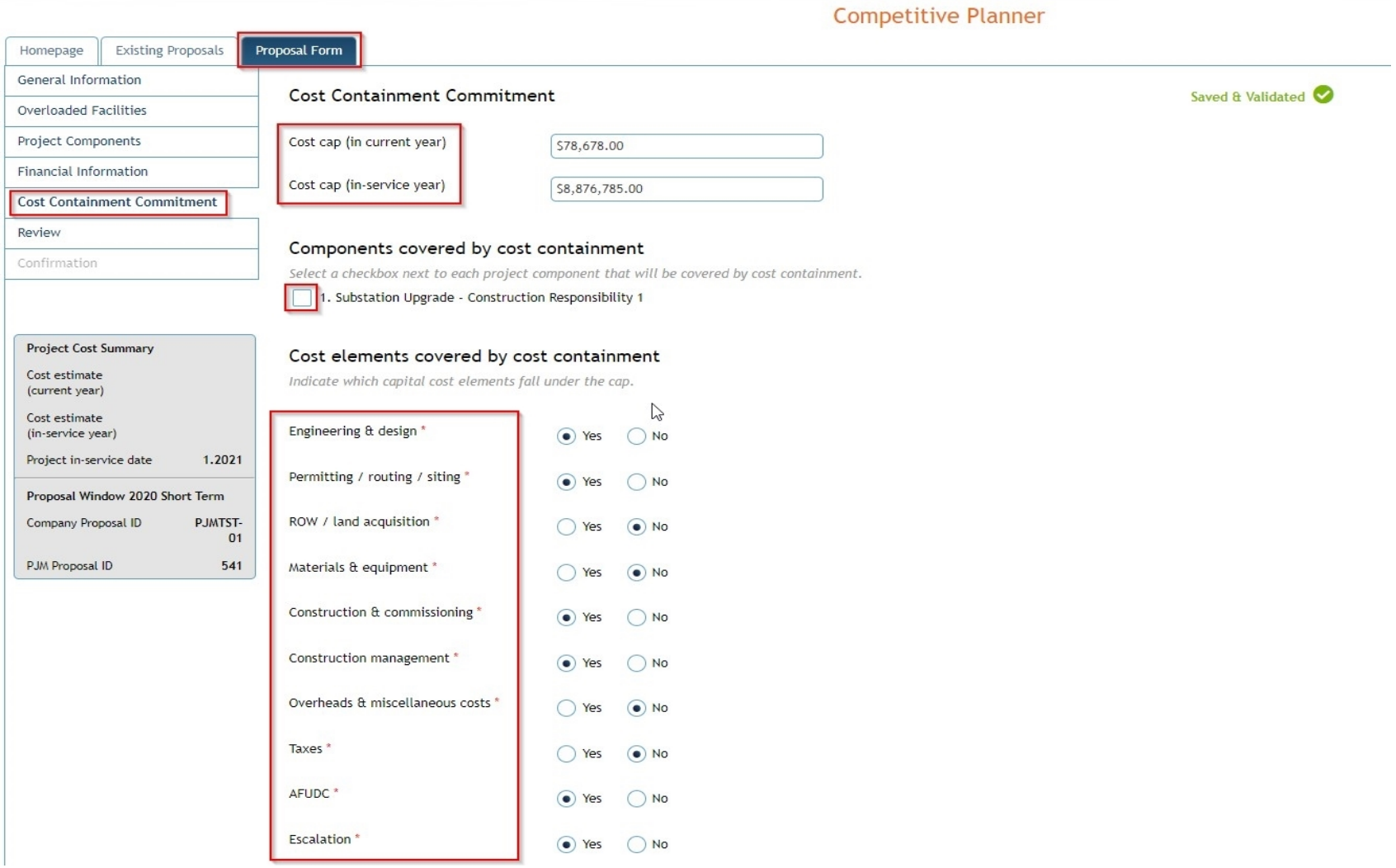


Financial Information



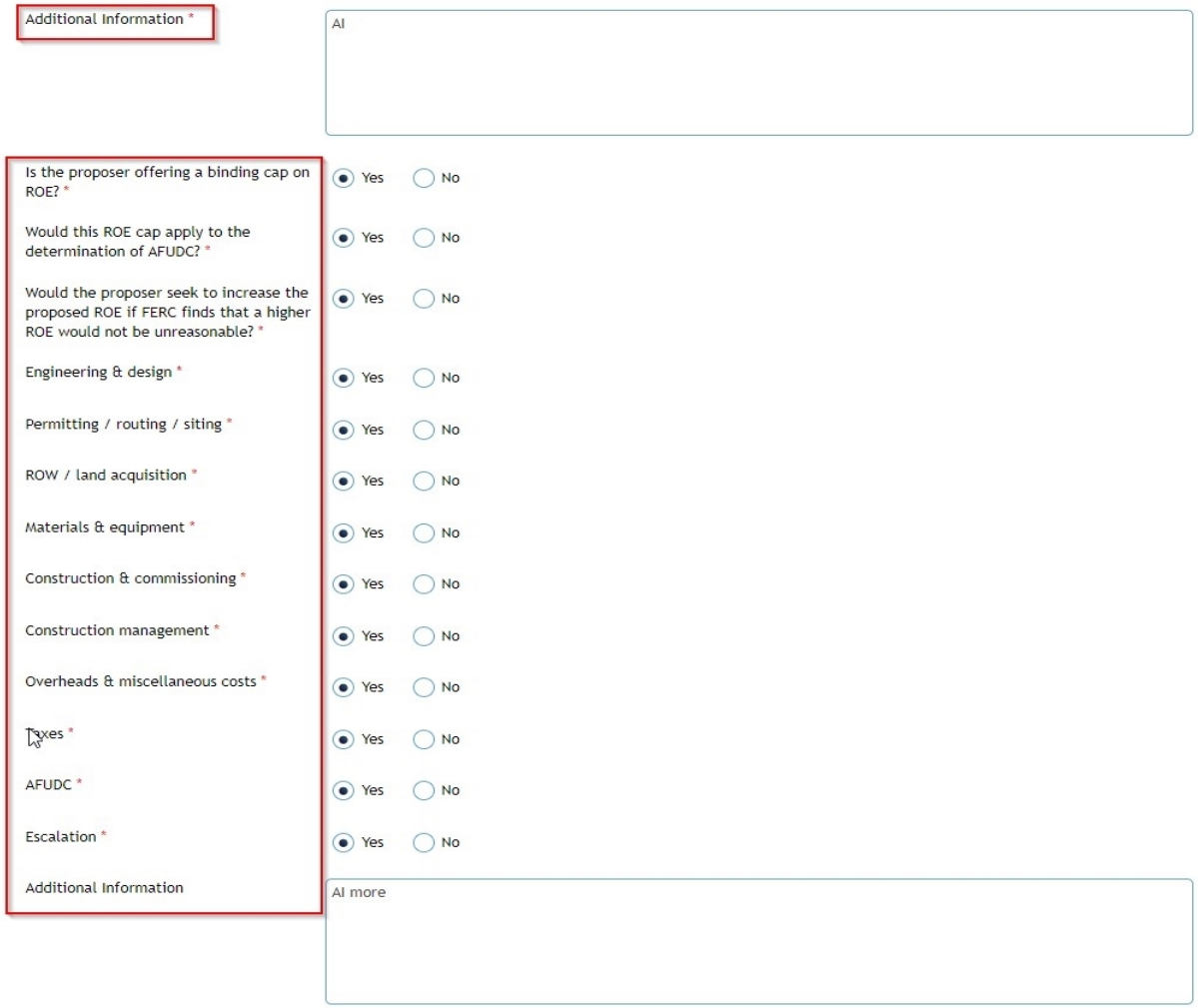
- Provide the Capital starting date of the project, then the Projected Construction Start Date
- User Completed Template that is provided within the tool

Cost Containment



- Identify the Cost Containment Commitment and which components that have been saved prior are covered
- Identify the cost elements covered by cost containment

Cost Containment

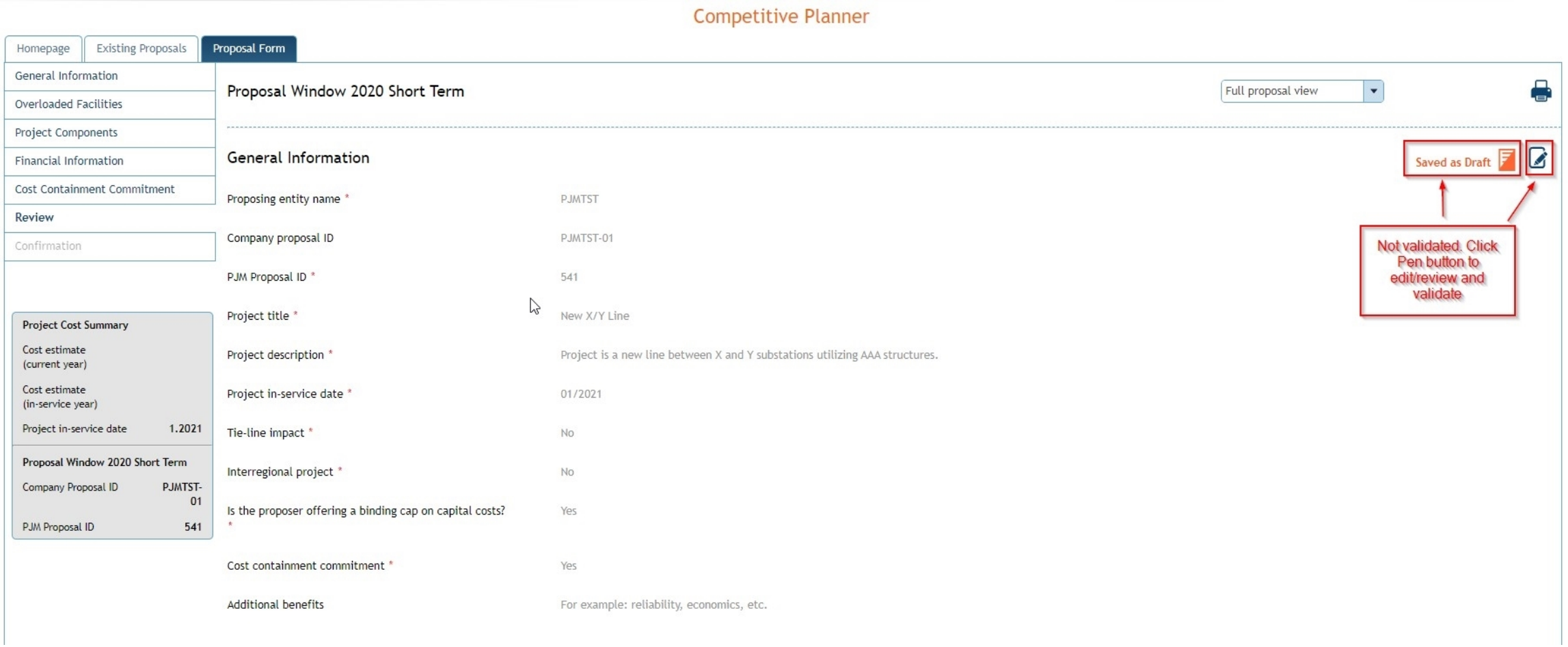


- Provide any additional information to clearly describe the Cost Containment being offered for the proposal

Cost Containment

- Provide any supporting documents at the end of the Cost Containment page.

Review



Review – Validated Example

Supporting Documents

Project analysis attachments * Comp Plan FG.xlsx

Market efficiency simulation modeling files *

Overloaded Facilities

Validated. User can still click Pen button to edit before submittal

Congestion Drivers

Saved & Validated

CD #	Analysis type	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone
ME-S65	Winter N1 Volt High	360337	ABC name4	342813	5SUMM SHAD T	1	161/161	PG&E
ME-S64	Summer N1 Thermal	360336	ABC name3	342812	5SUMM SHAD T	2	161/161	PPL

Existing Flowgates

Saved & Validated

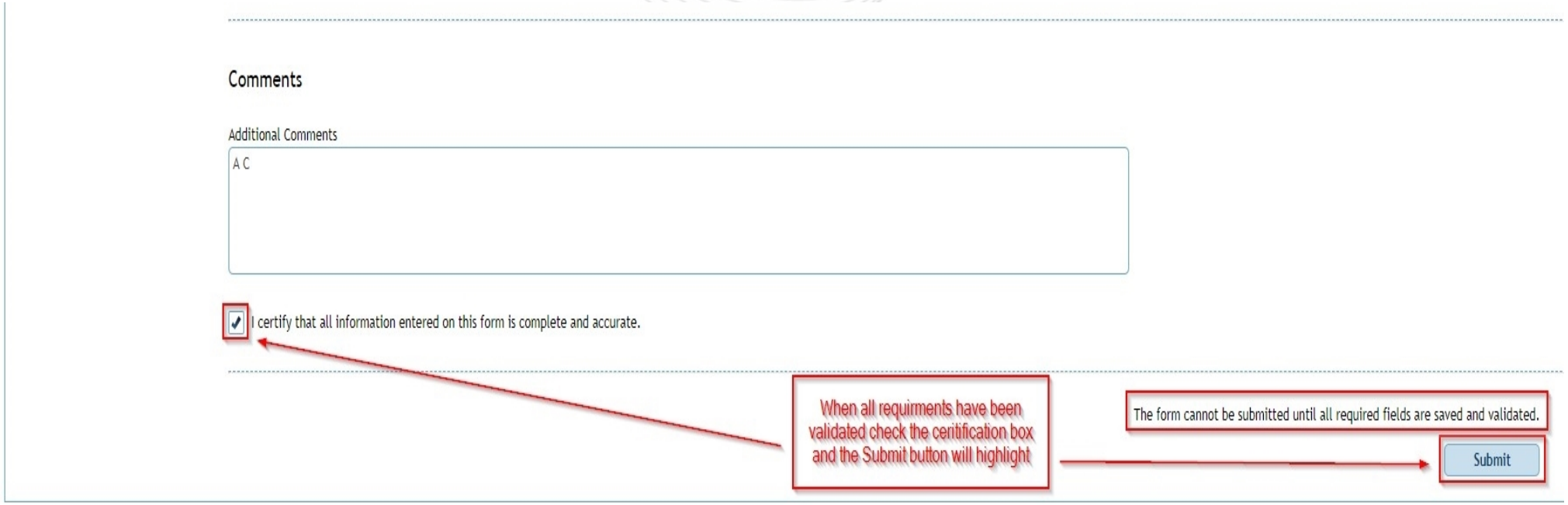
FG #	Analysis type	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone
N1-S61	Summer N1 Volt Low	250086	XYZ name	249988	08BKJ135	1	138/138	PECO
N1-S62	Winter N1 Volt High	360335	ABC name1	342812	5SUMM SHAD T	1	161/161	PPL
N1-S63	Summer N1 Thermal	360335	ABC name1	342812	5SUMM SHAD T	1	161/161	PPL

New Flowgates

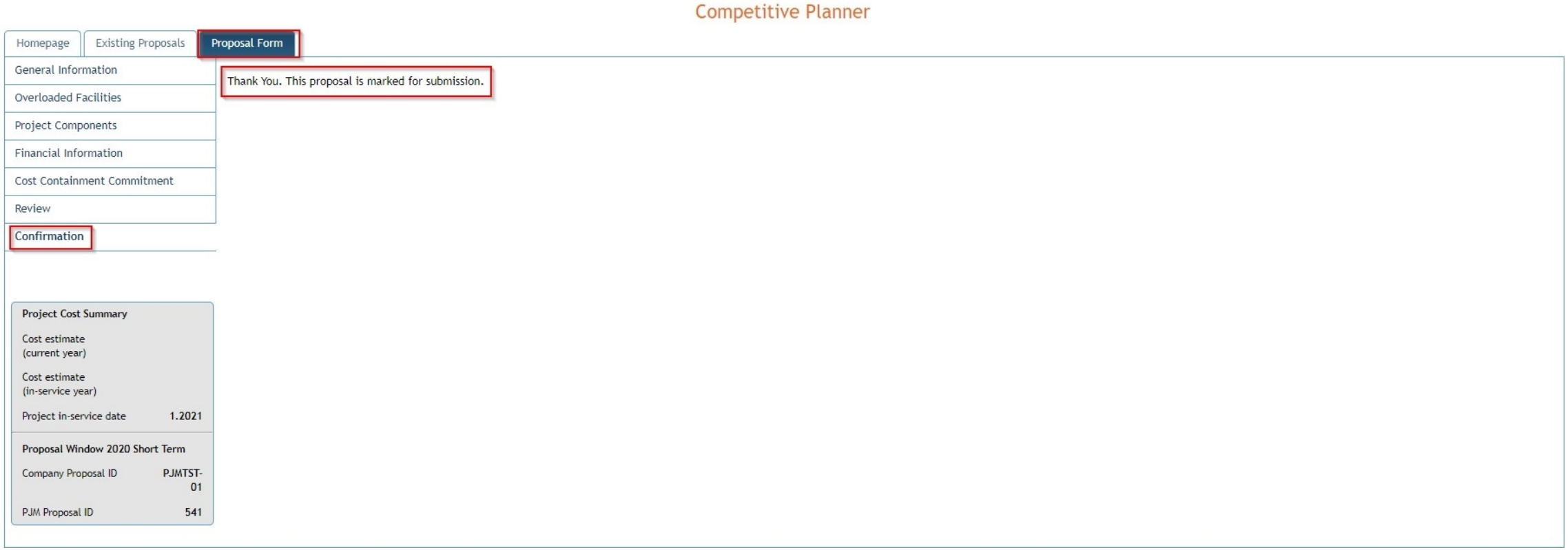
Saved & Validated

FG #	Analysis type	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone
FG-541-1	Winter N1 Volt High	876876	765	7687	686	876	100/200	AEP

Review – Final Submission



Final Submission Page



Updating Submitted Proposals

- Users are able to edit their submitted proposals prior to the closing of the Window, however please note that any change will remove the submission status from the proposal and you will need to “Save and Validate” each portion of the proposal again and “Submit” again as discussed earlier in the presentation.
- This submission can be resubmitted by anyone that has a submitter role.

Additional Help

- If you run into any additional issues regarding the tool, please reach out to the Competitive Planner Tool Admins at ProposalWindow-Admin@pjm.com

Resources

- Competitive Planner – User Guide
  - https://pjm.com/-/media/etools/planning-center/competitive-planner-user-guide.ashx

- Competitive Planner Demonstration
  - https://videos.pjm.com/media/1_f7a912e2

Single Line Diagram (SLD)
Guidance for Open Window Submittals

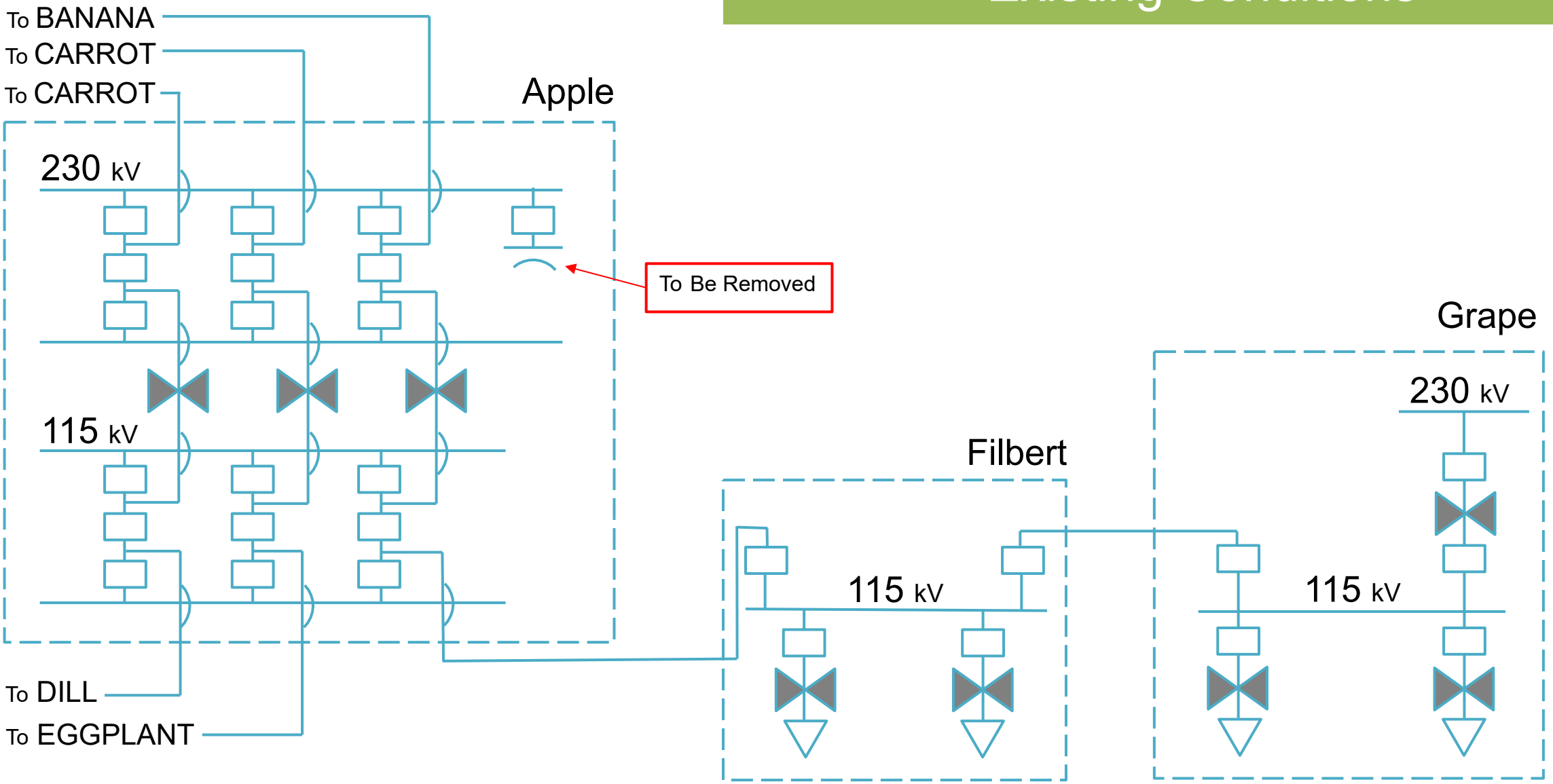
SLD - Guidance for Open Window Submittals

PJM typically receives many project proposals whenever a competitive window is open. The process of selecting a winning proposal includes PJM Transmission Planning modeling each project and subsequently performing reliability analysis.

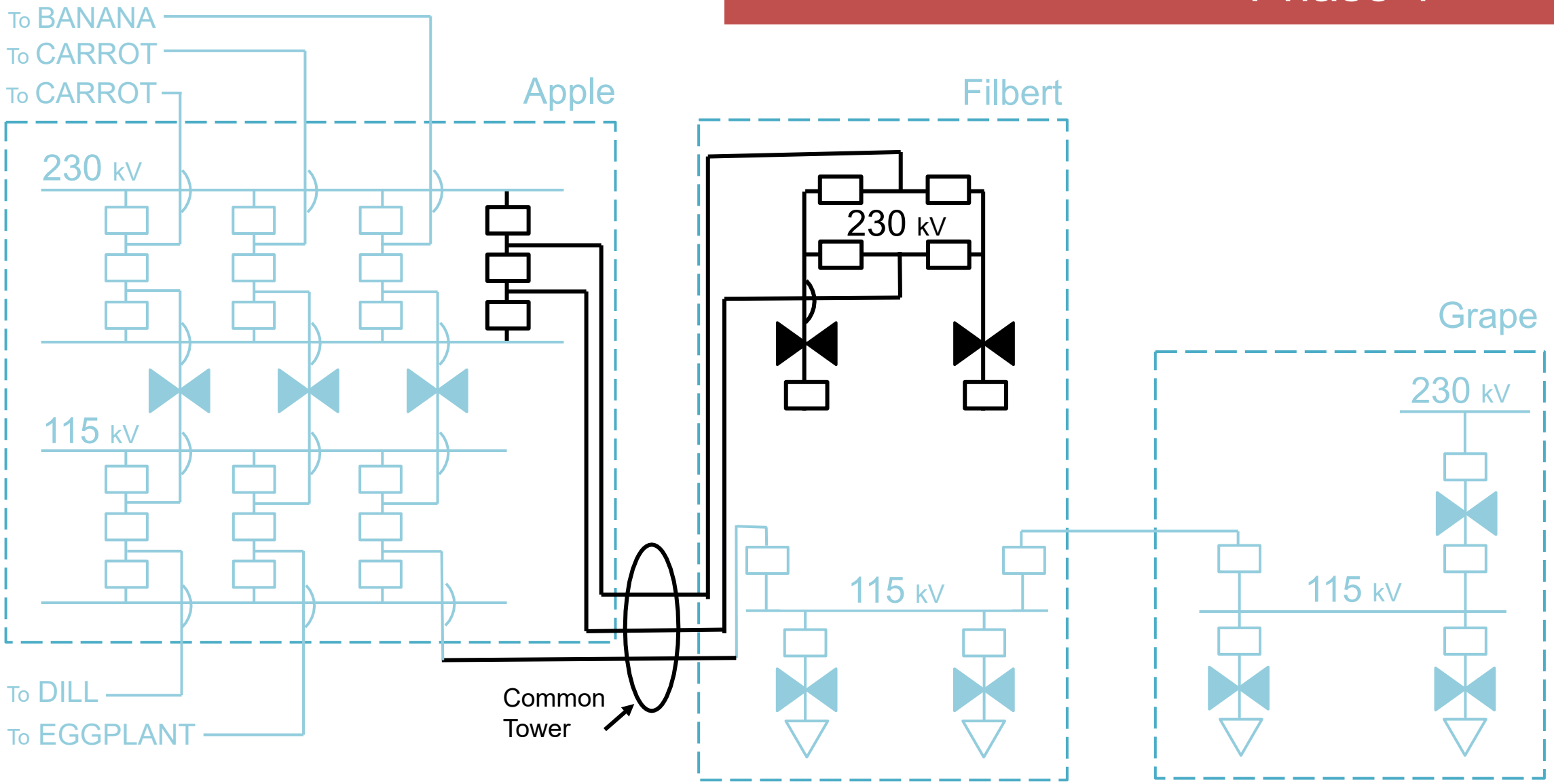
Single Line Diagrams are critical for communicating the proposal:

- Validating the modeling (idv files) for accurate incorporation to the study case
  - Facilities to be Removed, Added, Modified
- Validating changes to the Contingency Sets
  - Contingency Definitions to be Removed, Added, Modified
- Understanding the sequencing of project phases
  - Existing System Topology - showing those facilities relevant to the proposed project
  - Post In-service Topology – resultant topology after each project phase

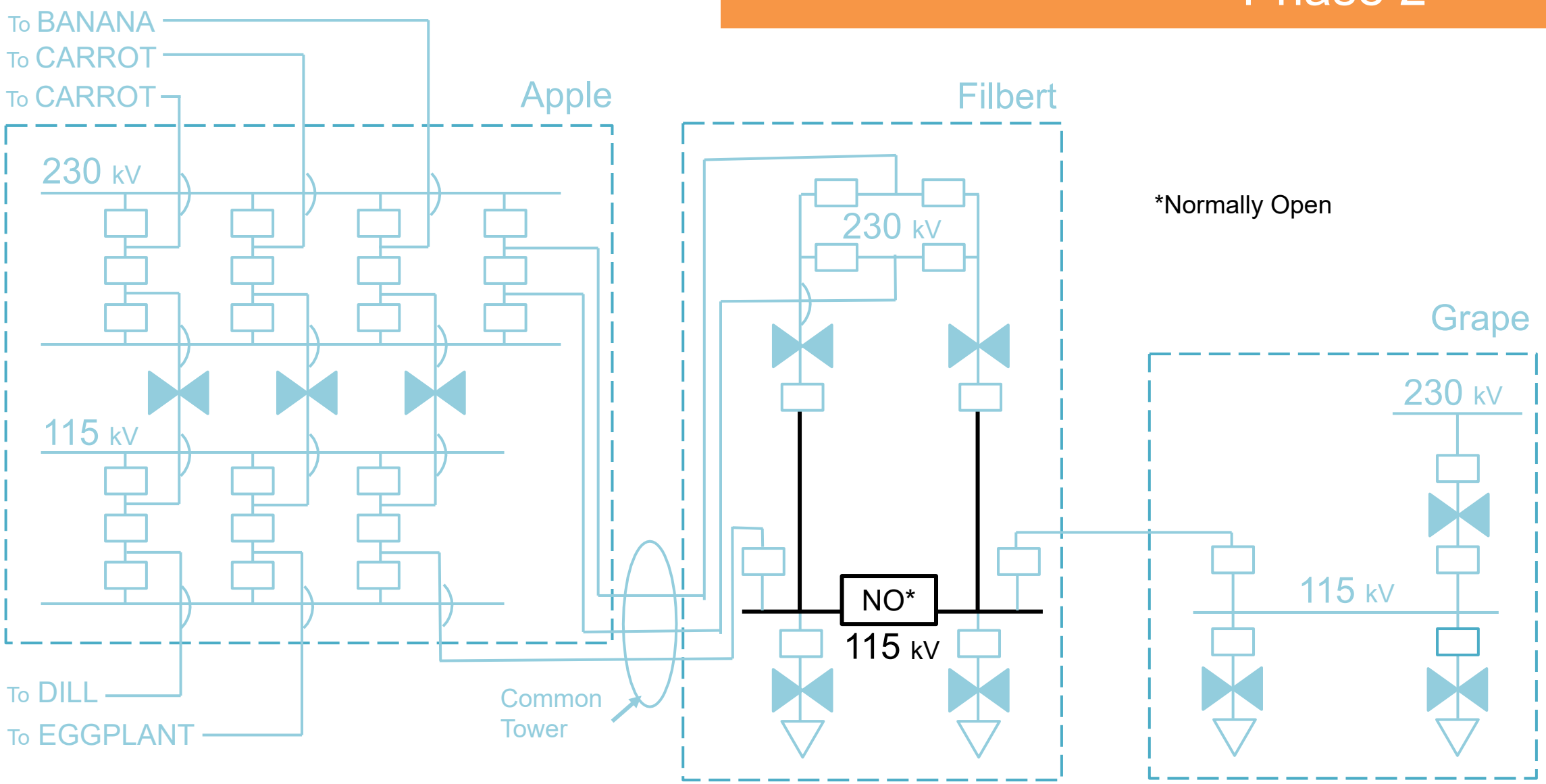
Existing Conditions



Phase 1

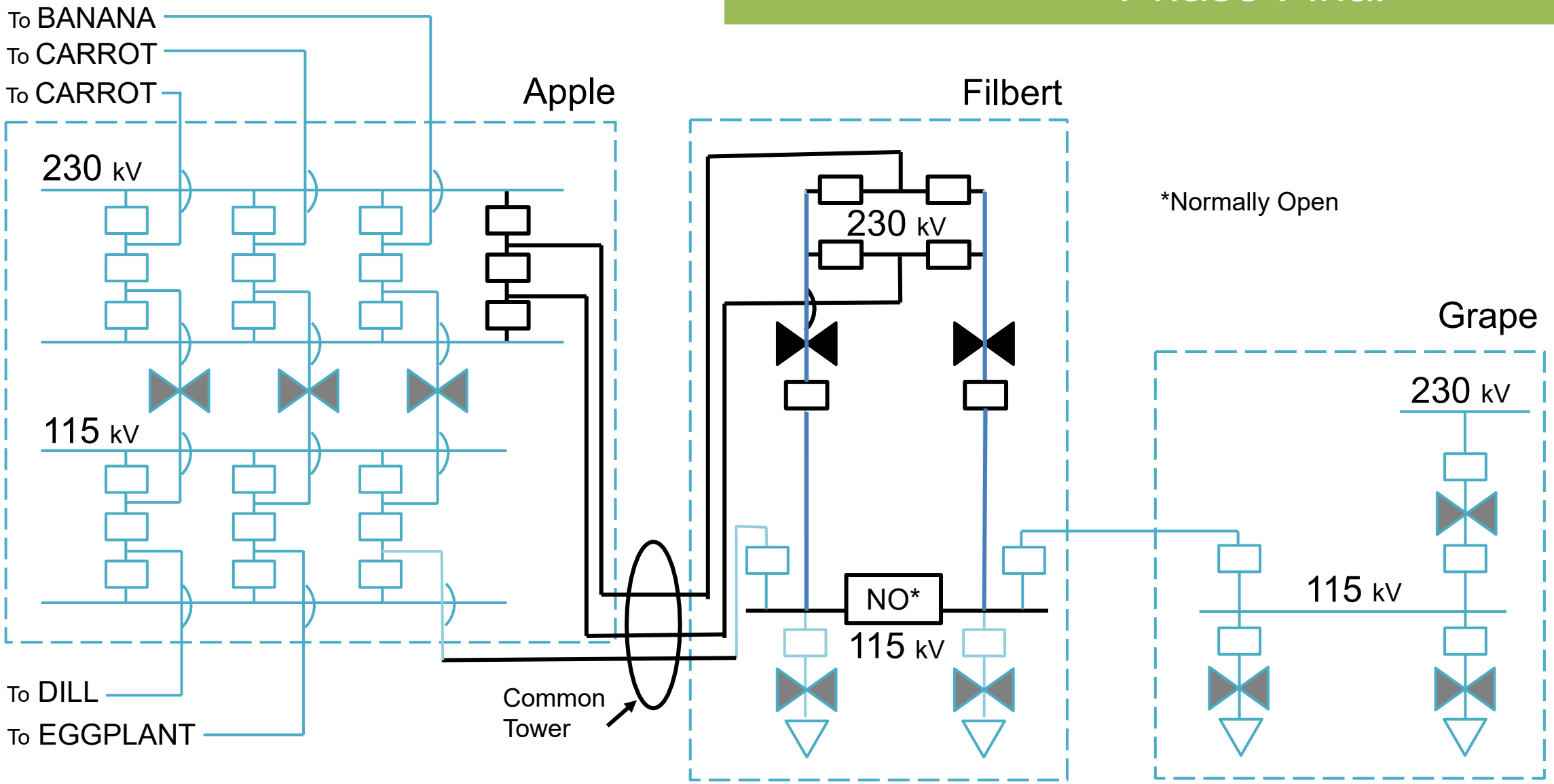

To BANANA
To CARROT
To CARROT
Apple
230 kV
115 kV
To DILL
To EGGPLANT
Common
Tower
Filbert
230 kV
115 kV
Grape
230 kV
115 kV

Phase 2



*Normally Open

Phase Final


To BANANA
To CARROT
To CARROT
Apple
230 kV
115 kV
To DILL
To EGGPLANT
Common Tower
Filbert
230 kV
NO*
115 kV
*Normally Open
Grape
230 kV
115 kV

SLD Guidance - Conclusion

Proposing entities may use their own graphics on submitted SLDs
For optimal communication and clarity:

- SLD of Existing System
  - Only show facilities relevant to the project.
  - Identify facilities to be removed in the subsequent project phase. These facilities will be missing in subsequent SLD
- SLD of Intermediate Project Phase
  - All facilities installed from a previous project phase should be represented the same as existing facilities (Normal Weight)
  - Ensure all facilities identified for removal from a previous project phase are missing
  - Identify all facilities added in the current project phase (Heavy Weight)
  - Identify facilities to be removed in the subsequent project phase.
  - Include graphic to facilitate validation of Contingency definitions (i.e. Common Tower, breaker diagrams, etc.)
- SLD of Final Project Phase
  - Identify all facilities added for **all project phases** (Heavy Weight)

Contingency Naming Convention

What we need from TOs

For each RTEP study year, six (6) contingency files are required. The common names of these six contingency files and the associated NERC TPL contingency definitions are shown in the table below:

PJM File Name	TPL-001-5 Contingencies
Single	P1 (All)
P_2-1	P2.1
Bus	P2.2
Line_FB	P2.3, P2.4 P4 (All)
P5	P5
Tower	P7(All)

1. Standard Format

PJM has identified a specific naming standard convention to contingencies. This is necessary to be able to sort on contingencies that apply to certain seasons and assist in the consolidation of all contingency files into one (1) yearly set per contingency type.

Below is an example of the standard format:

“Company Name” _ “TPL Number” - “Sub Number Remainder of Contingency Title” _ “Sort” - ”Seasonal Restricted”

2. Seasonal Consideration and Sorting

To maintain all different seasonal contingencies within a yearly contingency case, contingency titles will require a standard adder to providing sorting capability.

Command for Cont.	Command for Cont.
_SRT-A	_SORT-ALL
_SRT-S	_SORT-SUM
_SRT-W	_SORT-WIN
_SRT-L	_SORT-LL
_SRT-SL	_SORT-SUM & LL
_SRT-WL	_SORT-WIN & LL
_SRT-SW	_SORT-SUM & WIN

3. Contingency File Naming Convention

Below are several examples of valid contingency names:

AP_P1-1_MP-138-513_SRT-S
ATSI_P1-2_OEC-69-010_SRT-A
AEP_P1-2_#5522_SRT-L
CE_P4_207-38-L4606N_SRT-A
DVP_P7-1_LN 46-74_SRT-SW
ME_P2-2_ME-115-022T_SRT-W

4. Contingency File Naming Convention

PJM requires consistent naming of the .con files to assist when compiling the various contingency files from the different members together. Below is the standard for naming contingency files.

RTEP-SSSS_YYYY_ CCCC_TTTT_RR

Legend for the format above where:

- S = RTEP Series Year
- Y = Case Year
- C = Company
- T = Type (Tower, Single, Line_FB, Bus, P_2-1, P5)
- R = Revision (Start at Revision 0)

Contingency Change & Idev File Submissions

Contingency Changes

Currently, PJM receives contingency changes in multiple formats:

- Text file, excel, word
- Deletions, additions, modifications
- All in one file vs. separate files

PJM is looking to standardize the submission of contingency changes to minimize confusion and any potential errors:

1. Submit contingency changes using the provided “Contingency Change Submission” template
2. Follow the contingency naming convention as described in previous section
3. Use unique contingency names (i.e. no duplicate contingencies)
4. Use ‘delete’ and ‘add’ methodology in template to represent contingency modifications

Contingency Changes

New Contingencies

Delete	Add
N/A	CONTINGENCY 'PJM_P1-2_BUS1_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####2 CKT 1 /* BUS 1 138 TO BUS 2 138 END

Deleted Contingencies

Delete	Add
CONTINGENCY 'PJM_P1-2_BUS1_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####2 CKT 1 /* BUS 1 138 TO BUS 2 138 END	N/A

Delete	Add
CONTINGENCY 'PJM_P1-2_BUS1_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####1TO BUS #####2 CKT 1 /* BUS 1 138 TO BUS 2 138 END	CONTINGENCY 'PJM_P1-2_BUS1_BUS3_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####3 CKT 1 /* BUS 1 138 TO BUS 3 138 END

Contingency Changes

Modified Contingencies – 1:2 (or more) Replacements → Merge the “Delete” cells

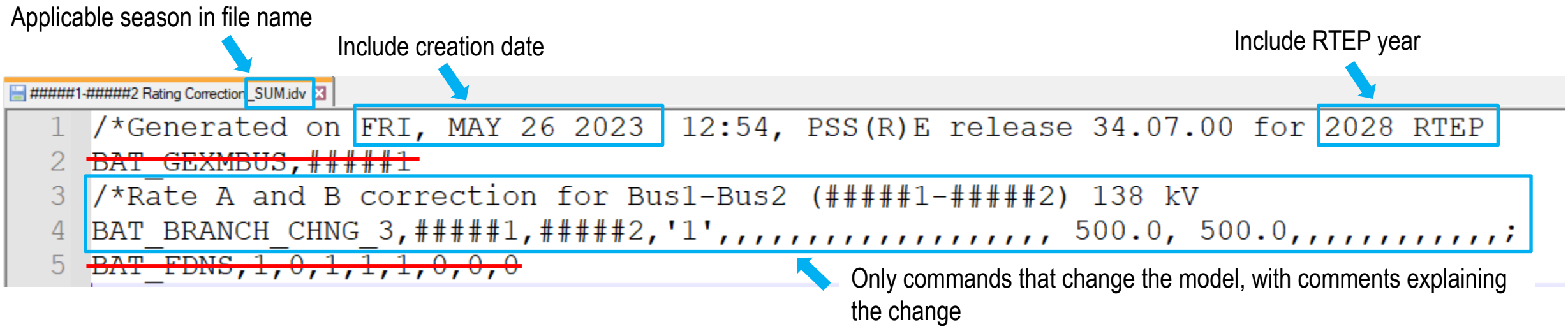
Delete	Add
CONTINGENCY 'PJM_P1-2_BUS1_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####2 CKT 1 /* BUS 1 138 TO BUS 2 138 END	CONTINGENCY 'PJM_P1-2_BUS1_BUS3_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####3 CKT 1 /* BUS 1 138 TO BUS 3 138 END
	CONTINGENCY 'PJM_P1-2_BUS3_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####3 TO BUS #####2 CKT 1 /* BUS 3 138 TO BUS 2 138 END

Delete	Add
CONTINGENCY 'PJM_P1-2_BUS1_BUS3_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####3 CKT 1 /* BUS 1 138 TO BUS 3 138 END	CONTINGENCY 'PJM_P1-2_BUS1_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####1 TO BUS #####2 CKT 1 /* BUS 1 138 TO BUS 2 138 END
CONTINGENCY 'PJM_P1-2_BUS3_BUS2_SRT-A' DISCONNECT BRANCH FROM BUS #####3 TO BUS #####2 CKT 1 /* BUS 3 138 TO BUS 2 138 END	

Idev Files

PJM is looking to standardize the submission of idev files to minimize confusion and any potential errors:

1. Add comments inside the idev file to clearly show/explain the changes being made
2. Include only commands that change the model (i.e. no BAT_GEXMBUS, BAT_FDNS, etc.)
3. In the first line of the idev, add the following:
   a) Idev creations date
   b) RTEP case year
4. Include the applicable season that the idev is applicable to in the file name (WIN, SUM, LL, or All)



Contact

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(866) 400 – 8980

custsvc@pjm.com

Revision History

V1 – 06/02/2023 – Original slides posted

PROTECT THE POWER GRID

THINK BEFORE YOU CLICK!

pjm

Be alert to malicious phishing emails.

Report suspicious email activity to PJM.

(610) 666-2244 / it_ops_ctr_shift@pjm.com