

Critical Infrastructure Stakeholder Oversight

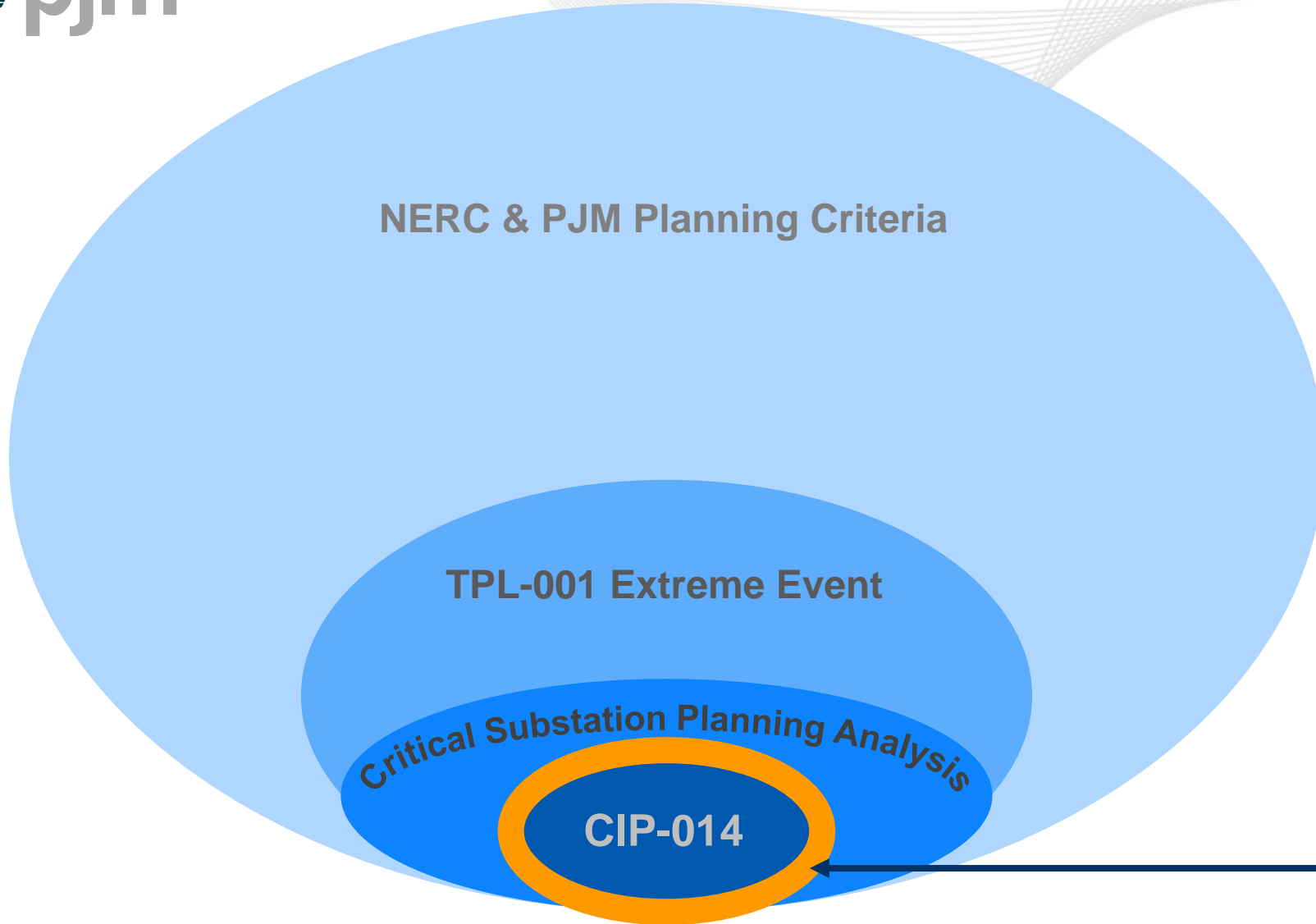
Michael Herman
CISO Subject Matter Expert
Markets & Reliability Committee
May 26, 2021

- Issue brought forward in response to the TO's intent to file a new Attachment M-4 for the planning of CIP-014 Mitigation Projects ("CMPs")
 - Issue Charge approved at the December 12, 2019 Planning Committee
- On March 17, 2020, FERC approved Attachment M-4 which sets forth the planning procedures that apply to a limited subset of supplemental projects designed to mitigate the risk associated with CIP-014-2 facilities
 - Updated Issue Charge approved at the May 12, 2020 Planning Committee which focuses only on the Avoidance and Mitigation of *future* CIP-014 facilities; not those already designated as *current* CMPs.
- On November 19, 2020 FERC issued an order addressing arguments raised on rehearing
 - CIP-014 Mitigation Projects can be developed only as Supplemental Projects
 - PJM Transmission Owners retain all rights to plan Supplemental Projects

- PJM hosted 16 Special CISO meetings (January 2020 – March 2021) to provide education, propose solutions, and review manual and OA language for the Avoidance & Mitigation of CIP-014 facilities
 - July 2020 MRC first read to revoke the CISO Issue Charge being worked at the Special PC Sessions and replace with an MRC PS/IC due to delays in mitigation solution options.
 - 2 non-binding polls for consensus in August and October 2020
- January 11, 2021: First read of Avoidance and Mitigation packages
- February 9, 2021: Vote on Avoidance and Mitigation packages
 - Avoidance package and manual language (M14B & M14F) passed with 77% support
 - Avoidance package and manual language preferred over status quo with 61% support
 - Mitigation package passed with 61% support
 - Mitigation package preferred over status quo with 60% support
 - Operating Agreement language to address Mitigation has been reviewed during multiple special sessions in 2021

- **Requirement 2.4.** Each Transmission Owner shall implement procedures, such as the use of nondisclosure agreements, for protecting sensitive or confidential information made available to the unaffiliated third party verifier and to protect or exempt sensitive or confidential information developed pursuant to this Reliability Standard from public disclosure.
- **Guidelines and Technical Basis:** With respect to the requirement that Transmission owners develop and implement procedures for protecting confidential and sensitive information, the Transmission Owner could have a method for identifying documents that require confidential treatment. One mechanism for protecting confidential or sensitive information is to prohibit removal of sensitive or confidential information from the Transmission Owner's site. Transmission Owners could include such a prohibition in a non-disclosure agreement with the verifying entity.
 - Parts 2.4 and 6.4 require the entities to have procedures to protect the confidentiality of sensitive or confidential information. Those procedures may include the following elements: 1. Control and retention of information on site for third party verifiers/reviewers. 2. Only "need to know" employees, etc., get the information. 3. Marking documents as confidential 4. Securely storing and destroying information when no longer needed. 5. Not releasing information outside the entity without, for example, General Counsel sign-off.

- CISO concepts divided into two processes: Avoidance and Mitigation
 - Avoidance (Vote Today): The study of proposed RTEP projects to ensure that no new critical facilities are created
 - Mitigation(Future MRC): The process under which PJM can address critical facilities that were unavoidable



- Loss of Load - 1,000 MW
- Three Levels of Facility Trip
- Non-convergence

- **Critical Substation Planning Analysis:**
 - Analyses performed to ensure system reliability based on a study of select substation contingencies, which are based upon TPL-001-4 Extreme Contingency Analysis. The analysis evaluates the loss of load and potential cascade events which may result from power flow analysis. Due to the sensitive nature of the analysis, identified substations and results require confidentiality consistent with established processes and good utility practice.

Avoidance

- CISO Avoidance process performs Critical Substation Planning Analysis using cascading trees tool to simulate the impacts of a critical substation outage
- Analysis, metrics and sensitivity consistent with cascading trees software.
- Cascading trees analysis is based on evaluation of instability, uncontrolled separation or cascading.

- Confidentiality is significant issue with critical substation analysis
- Process ensures transparency where possible, confidentiality where required.
- Avoidance process studies proposed projects to address reliability criteria
- If proposed project creates a new critical substation, PJM will communicate to proposing entity

- Competition: Status Quo
- Cost allocation: Status Quo

- PJM: Performs RTEP critical substation planning analysis with cascading trees tool. Communicates information in accordance with confidentiality requirements.
- Stakeholders: Status quo with limited/restricted level of communications to entity proposing project triggering potential violations of PJM's critical substation planning analysis.
- States: Status quo with ability to provide feedback consistent with the confidentiality provisions in the Operating Agreement
- Asset Owners: Status quo with limited/restricted level of communications to entity proposing project triggering potential violation of PJM's critical substation planning analysis.



M14B and M14F Updates

- Through development of OA language, PJM and stakeholders have identified updates required in M14B and M14F.
- Modification Language updated in both M14B (S2.9) and M14F (S8.1.1)
 - “If a proposed project fails the Critical Substation Planning Analysis, PJM may modify the technical specifications of a proposal so that it avoids a failure of CSPA, as defined in S2.9. This may result in the modified proposal being determined to be the more efficient or cost-effective proposal for recommendation to the PJM Board.”

- Additional update to M14B:
 - Removal of “not a driver” text
 - Addition of 5 year annual RTEP cycle to CSPA process
 - Clarified voltage cutoff
 - “Loss of Load approaching 1000 MW”
 - Clarified non-convergence text

- Updates since MRC First read:
 - M14B
 - S2.9 Added section references to 2.3.3 and 2.9
 - S2.9 Added CSPA retool language
 - M14F
 - S2.2 – Added NDA reference
 - S8.1.1 – Added section reference to M14B S2.9
 - S8.2.1 – Updated to use CSPA terminology

- May MRC (Today) – Seeking Endorsement - Avoidance
- Future MRC – Seeking Endorsement - Mitigation
- Future MC – CISO OA Language

SME: Michael Herman,
Michael.Herman@pjm.com

Secretary: Joe Hay,
Joseph.Hay@pjm.com

Critical Infrastructure Stakeholder Oversight



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

Appendix



Avoidance Package

#	Design Components	A
12a	CSPA Driver/ Criteria Analysis	PJM performs RTEP critical substation planning analysis utilizing the cascading trees tool.

#	Design Components	A
12b	Metrics/Measurements/Factors.	Consistent with RTEP critical substation planning analytical methods incorporated in cascading trees tool software..

#	Design Components	A
12c	Sensitivity Testing	Consistent with analysis methods as indicated in the critical substation planning analysis described above.

#	Design Components	A
13a	Communication Procedures	PJM to communicate failure of project to meet critical substation planning analysis. If a project proposal does not pass critical substation planning analysis, PJM to provide verbal update with limited/restricted level of information to entity who submitted the project proposal through competitive window. Information limited to analytical results only.

#	Design Components	A
13b	Confidentiality	If project proposal does not pass critical substation planning analysis, PJM shall provide limited/restricted level of information to project proposal.



PJM Package Proposal – Design Component 13c

#	Design Components	A
13c	CEII	Status Quo

#	Design Components	A
13d	Re-evaluation Process	Not Applicable

#	Design Components	A
14	Transparency	PJM communicate failure of project to meet RTEP critical substation planning analysis. If a project proposal does not pass critical substation planning analysis, PJM shall provide limited/restricted level of information to entity proposing project through the competitive window.

#	Design Components	A
15	Competition	Limited to proposing entities ability to mitigate initial issue identified in competitive process. No opportunity to revise a proposal submitted through a competitive window once the window closes to address issues that trigger potential violations associated with the RTEP critical substation planning analysis.

#	Design Components	A
16	Cost Allocation/ Cost Recovery	Status Quo

#	Design Components	A
17a	Roles and Responsibilities - PJM	Performs RTEP critical substation planning analysis with cascading trees tool. Communicates information in accordance with confidentiality requirements as described above. E.g., release limited/restricted level of information to proposing entity.

#	Design Components	A
17b	Roles and Responsibilities – State Commissioners	Provide feedback consistent with the confidentiality provisions in the Operating Agreement

#	Design Components	A
17c	Roles and Responsibilities – PJM Stakeholders	Status Quo with limited/restricted level of communications to entity proposing project triggering potential violations of PJM's RTEP critical substation planning analysis.

#	Design Components	A
17d	Roles and Responsibilities – Asset Owners	Status quo with limited/restricted level of communications to entity proposing project triggering potential violation of PJM's RTEP critical substation planning analysis.