



Interconnection Reliability Operating Limit (IROL) Critical Infrastructure Protection (CIP) Cost Implications

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- Facilities designated by PJM as “critical” to the derivation of Interconnection Reliability Operating Limits (IROL) and their associated contingencies must meet higher North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Standards than “non-critical” facilities
- These costs cannot be competitively offered into the energy and capacity markets.

- CIP Standards becoming increasingly stringent for facilities that have a higher impact on reliable system operations
- The criteria in CIP-002-5.1a, Attachment 1 are used to determine a facility's impact level
 - All generators that are part of the Bulk Electric System will be categorized as at least “Low Impact”
 - Criterion 2.6¹ categorizes “Generation Facilities that have been identified as critical to the derivation of IROLs and their associated contingencies” as “Medium Impact”
- For convenience in this presentation, these resources are referred to as “IROL-critical”

¹See “Reliability Standards for the Bulk Electric Systems of North America”, page 171 (page 28 of the CIP-002-5.1a standard) available at <https://www.nerc.com/pa/Stand/Reliability%20Standards%20Complete%20Set/RSCompleteSet.pdf>

- PJM reviews the list of "IROL-critical" resources annually
 - Resources can be added or removed as the system topology evolves and patterns of load and generation change over time.
 - Resources are notified by PJM when they are designated (or un-designated) as "IROL-critical"
- 3 units identified each of the past 4 years
- 1 unit identified in the 2019 analysis

What steps are required to meet the “medium risk” standard and how much does that cost?

- The Requirements to be met by “Medium Impact” facilities are not clearly stated and require interpretation
 - Some insight into FERC’s interpretation of the CIP standards may be gleaned from an October 6, 2017 FERC Staff report²
- Compliance with NERC CIP Standards corresponding to “Medium Impact” category
 - Does not arise from or relate to and products or service in the PJM Tariff
 - PJM has no authority to interpret or enforce the NERC CIP Requirements
 - PJM is not positioned to determine the appropriate measures an “IROL-critical” generator should implement, or the reasonable cost of those measures

² Available at: <https://www.ferc.gov/legal/staff-reports/2017/10-06-17-CIP-audits-report.pdf>

- PJM is the sole entity determining if a facility must be designated as "IROL-critical"
 - The generator has no control or influence over this decision
 - Nor does the generator have control over factors that change over time, such as transmission topology, that may result in the generator becoming designated (or un-designated) as "IROL-critical"
- Designation as "IROL-critical" by PJM may require the generator to take additional steps to comply with the medium impact CIP Requirements, beyond the steps required by all BES generators to meet low impact requirements
 - Compliance is not optional, and is periodically audited by NERC
- Prior FERC orders have confirmed that market participants should have a viable path to cost recovery for mandated costs
 - For example, see FERC Order 672, paragraph 259:
“Pursuant to section 1241 of EPCRA, the Commission will allow recovery of all costs prudently incurred to comply with the Reliability Standards.”
- No cost recovery options currently exist for PJM "IROL-critical" generators

Appendix

- CIP = Critical Infrastructure Protection
- IROL = Interconnection Reliability Operating Limit
- SOL = System Operating Limit
- NERC = North American Electric Reliability Council
- ERO – Electric Reliability Organization
- CoS = Cost of Service
- OATT = Open Access Transmission Tariff
- BES = Bulk Electric System