

CONNECTING

Energy Infrastructure

Development of Minimum Design Standards:
Review of MISO and SPP

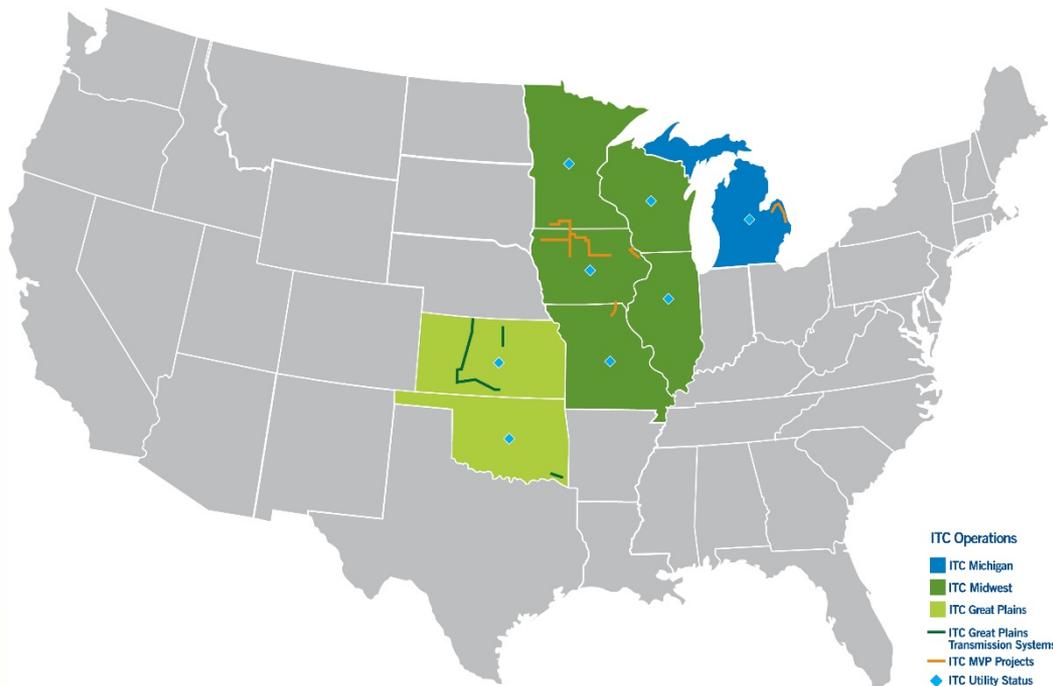
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ITC TODAY

\$5.5B Invested In Infrastructure Since 2003



- 4 Subsidiaries in 7 states
- 15,600 Circuit miles
- 90,000 Square mile service territory
- 600 Employees making a difference
- Members of 3 RTOs
- Flexible business model that drive value

SPP Standards for Competitive Projects

Background

- Minimum Design Standards for Competitive Upgrades (2015)¹
- Created by the Minimum Design Standards Task Force (MDSTF)
- Study Estimate Design Guide (2011) is a precursor; the guide is intended to promote consistency in study estimates for projects at 100 kV and above
- The MDSTF used the Design Guide as a foundation: reviewed item by item, removing subjective items (routing, for example) that are part of SPP's evaluation criteria for competitive projects
- The geographic diversity of the SPP region requires special consideration (ice loading, for example)

SPP Standards for Competitive Projects

Development

- Meetings convened primarily over the phone; in-person meetings toward the end of the process
- One participant per company acted as a liaison and participated in meetings. Representation by line and station SMEs was about 50/50
- Protection, relaying, and communications were incorporated using material from a separate, pre-existing group
- Reliability was the focus: the group did not consider how minimum standards may impact the ultimate selection of bids
- Process took about 6-9 months; resulting standards apply to all competitive projects

MISO Standards for Competitive Projects

Background

- BPM-029: Minimum Project Requirements for Competitive Transmission Projects (2015)² is currently in draft form. Final draft to be presented to the Planning Advisory Committee for December approval
- Created by the Minimum Design Requirements Task Team (MDRTT)³; task team consists of volunteers from the Planning Subcommittee (PSC)
- Transmission Owners have published planning criteria to which they adhere for projects outside of the Order 1000 process⁴
- Minimum requirements developed to allow TOs to follow their existing planning criteria as closely as possible when building competitive projects

MISO Standards for Competitive Projects

Development

- MISO focused initially on ratings and impedance, and task team members consisted of typical stakeholder participants (not design engineers). The focus shifted during the process and feedback from design engineers became more critical
- The task team met periodically by phone, with MISO requesting feedback on specific topics prior to releasing draft standards
- MISO created the draft standards based on feedback received and returned them to the Planning Subcommittee for further comment and approval

MISO Standards for Competitive Projects

Development

- Concerns over designs with “lowest common denominator” elements resulted in minimum standards with elements that are higher than some existing TOs’ standards
- Process took about 12 months; applies to all competitive projects

Lessons Learned

Process

- Start with a strawman
- Use incumbent utilities' standards as a guide
- Incumbents' standards guide the need for location-specific standards
- Existing standards provide insight into what works in the field
- Avoid pressure to closely align standards to an incumbent's existing standards
- Stay focused on reliability

Lessons Learned

Process

- A “least common denominator” approach is instructive but also requires a holistic review
- MISO’s draft standards are more planning-driven; SPP’s standards are more design-driven. The path for the DEDSTF should be clear up front for the task team to be most effective
- Keep in mind that business practices are subordinate to tariff requirements

Lessons Learned

Organization

- Divide work group discussions among areas of specialization (lines; substations; protection, controls, and communication) in the interest of efficiency—the experts are in the room
- Periodic in-person meetings throughout the process promote full participation
- Provide standards in a single document arranged by functional area

References

1. http://www.spp.org/documents/26087/minimum_design_standard_rev_1.pdf
2. https://www.misoenergy.org/Library/Repository/Tariff/BPM%20Drafts/DRAFT%20BPM-029%20Minimum%20Project%20Requirements%20for%20Competitive%20Transmission%20Projects_Clean.pdf
3. <https://www.misoenergy.org/STAKEHOLDERCENTER/COMMITTEESWORKGROUPSTASKFORCES/MDRTT/Pages/home.aspx>
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