



ISO Planning Standards – Remedial Action Scheme Guidelines Update

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Stakeholder Call
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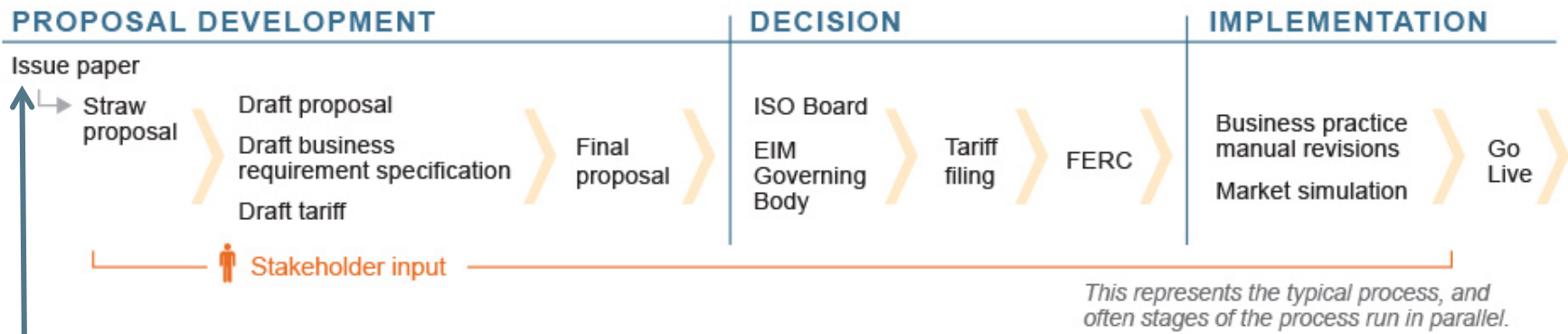
Reminders

- Calls are structured to stimulate an honest dialogue and engage different perspectives with the expectation that stakeholders have read the proposal.
- Please keep comments professional and respectful.
- We encourage stakeholders to submit questions via the WebEx chat feature.
- If time permits, verbal questions/comments will be addressed and time limits may be used to ensure we hear from all stakeholders.
- Please refrain from repeating or reiterating what has already been said so that we can manage the time efficiently

Agenda

- Goal & current SPS guidelines overview
- Drivers for the RAS guideline review updates
- Preliminary potential proposals
- Feedback request
- Proposed schedule and next steps

Stakeholder Process



We are here

Goal for the Review and Updates of the Current SPS Guidelines

Goal

Review and update the current System Protection Schemes (SPS) guidelines in the CAISO Planning Standards to align with and complement NERC Reliability Standards and to ensure a secure and reliable ISO infrastructure development. The SPS Guidelines will be updated as Remedial Action Schemes (RAS) guidelines in accordance with the NERC terminology.

Overview of Current Use of the RAS and Guidelines

- Currently, RAS is evaluated and implemented in the ISO transmission planning process or generation interconnection process to meet NERC reliability standards and to ensure a secure and reliable infrastructure development.
- Primary reasons that RAS is selected over building new transmission are lower cost and faster implementation timeline.
- RAS can help increase utilization of existing transmission facilities, make better use of scarce transmission resources and maintain reliability.
- There are currently 17 RAS guidelines to address the following:
 - Good engineering practices for the design and reliable operation of the RAS which are also covered in PRC-012-2 Standard
 - Specific RAS design (amount of generation tripping, number of monitored facility, number of contingency, effective generation tripping, telemetry, etc.)
 - RAS information and performance documentation which are also covered in PRC-012-2 Standard

Drivers for the RAS Guideline Review Updates

- Increasing number of RAS causes coordination concern
 - Existing number of NERC-related RAS on the bulk electric system (BES) in the ISO footprint: 69
 - Number of RAS added in the last 10 years: 21
 - Proposed future RAS: 36
 - The ISO relies far more on the use of RAS in lieu of transmission upgrades when compared with other ISO/RTOs in the country.
 - High utilization of RAS causes concern for coordinating various RAS implemented in close proximity of each other

Drivers for the RAS Guideline Review Updates (cont'd)

- **Alignment with NERC Reliability Standards**
 - NERC PRC-012-2 (Remedial Action Schemes) became effective as of January 1, 2021
 - This NERC standard includes reliability requirements for newly proposed RAS, as well as for performance of the existing RAS that would address several requirements in the current RAS guidelines
 - Updates and clarifications of the terminology used to describe single, double and local contingency to be consistent with NERC Standard TPL-001-5

Drivers for the RAS Guideline Review Updates (cont'd)

- Retirement of Diablo Canyon nuclear generating facility
 - Currently ISO SPS3 guideline requires that the maximum amount of generation tripping for a single element contingency cannot exceed the ISO's single largest generating unit contingency (i.e., 1 Diablo Canyon unit at 1,150 MW). For double element contingency, the maximum amount for generation tripping is 1,400 MW, which is based on the minimum amount of spinning reserves that the ISO has historically carried.
 - With the Diablo Canyon's planned retirement in 2024 and 2025, there is a need to revisit the maximum amount of generation tripping for single element contingency.
 - It is also prudent to review the maximum amount of generation tripping for double element contingency in concurrent with the review for the single contingency.

Drivers for the RAS Guideline Review Updates (cont'd)

- Implementation of dual load-resource facility addition to the ISO-controlled grid
 - Battery energy storage system (BESS) can function as a load or a resource, depending on its mode of operation.
 - This introduces increased complexity in the RAS design and implementation to mitigate potential reliability concerns due to changing flows to the grid that caused by charging or discharging of BESS.

Drivers for the RAS Guideline Review Updates (cont'd)

- Other Reasons
 - Other ISO initiative (i.e., Generator Contingency & RAS Modeling) may require future updates of the RAS guidelines pending development of the initiative.
 - Establish consistency between the guideline and actual RAS design implementation among PTOs. This may elevate certain RAS guideline requirements to become ISO planning standards.

Preliminary Potential Proposals

- Replace single element contingency with TPL-001-5 P1 and double contingency with other NERC TPL contingency types (P3 – P7)
- Clarify and simplify RAS design elements such as the following from the current SPS6 guideline:
 - Provide guidance on situations where
 - Individually each of the RAS align with the guidelines but in combination do not follow the guidelines.
 - Provide clarification on connecting all or some of the generators at the most effective locations
- Review of the current single and double contingency related generation tripped amount with the ISO historical spinning reserve requirements

Preliminary Potential Proposals (cont'd)

Guideline #	Potential Impact
1, 2,11,12,13 & 15	Removed as covered in PRC12-2
3	Review considering planned retirement of Diablo Canyon and historical spinning reserve requirements
4	Update leveraging PRC12-2
14	Removed as covered in TPL-001-5
Other Guidelines	Update as needed to clarify terms, scope or implementation in-line with updated RAS guideline principles

Feedback Request

The ISO is requesting stakeholders to provide comments regarding the following:

- Potential issues with removal of some of the guidelines
- Any other RAS guideline issues that have not been captured in the current guidelines
- RAS Design guidelines such as SPS6 & 7
 - Do the current guidelines give enough information regarding the design of the new RAS?
 - If not, what are the suggested enhancements
- Should some of the guidelines be converted to mandatory ISO planning standards?
- Are there any other RAS-related issues that need to be captured in the Issue Paper?

Proposed Schedule

Item	Proposed Dates
Post Issue Paper	17-Jun-21
Stakeholder Call	24-Jun-21
Stakeholder Comments Due	9-Jul-21
Post Straw Proposal	9-Aug-21*
Stakeholder Meeting	16-Aug-21*
Stakeholder Comments Due	30-Aug-21*
Post Revised Straw Proposal (tentative)	27-Sep-21*
Stakeholder Meeting (tentative)	4-Oct-21*
Stakeholder Comments Due (tentative)	18-Oct-21*
Post Draft Final Proposal	6-Dec-21*
Stakeholder Call	13-Dec-21*
Stakeholder Comments Due	27-Dec-21*

** Date is tentative and subject to change*

Comments

- Please submit comments on the issue paper by end of day July 9 using the template available on the initiative webpage at <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Planning-Standards-Remedial-Action-Scheme-Guidelines-Update>.