

Memorandum

To: ISO Board of Governors
From: Keith Casey, Vice President, Market & Infrastructure Development
Date: September 11, 2014
Re: **Decision on ISO planning standards**

This memorandum requires Board action.

EXECUTIVE SUMMARY

The California Independent System Operator Corporation is required through its tariff to adhere to planning standards established by the North American Electric Reliability Corporation (NERC), as well as regional standards, criteria and business practices established by the Western Electricity Coordinating Council (WECC). In addition, the ISO has identified other requirements necessary for reliable system operation that are referred to and documented as the ISO planning standards.

All of these planning standards are critical to providing reliable service to customers. They also form the foundation or basis for all planning activities. Transmission projects are developed and advanced as necessary to ensure compliance with these standards, and when transmission projects are advanced for other reasons, such as meeting economic or policy considerations, those projects must also remain compliant with approved planning standards.

As such, the planning standards set the direction for planning activities, and the basis for many of the transmission projects approved by the ISO; the planning standards are therefore only modified with careful consideration.

As described below, Management proposes to revise the ISO planning standards to address significant emerging issues:

- 1) Add a new standard to codify the current planning practice for local area events in high density urban load areas (effective immediately upon approval);
- 2) Add a new standard pertaining to planning for areas with unique characteristics (such as San Francisco) requiring consideration of corrective action plans to mitigate the risk of extreme events (effective immediately upon approval); and

- 3) Update the existing standards to ensure consistency with the new NERC transmission planning standards, which among other changes, consolidates the four existing standards into one standard (effective April 1, 2015).

The ISO is proposing that the effective date of the revised ISO planning standards be staged as set out above align with the effective dates of the applicable NERC Standards. To effectuate this staging, Management has included two versions of the revised planning standards. The first version (Attachment 1) is the September 18, 2014 version that highlights the changes that take effect upon Board approval. The second version (Attachment 2) is the April 1, 2015 version that represents a clean version of Attachment 1 with red-line modifications of the changes that will go into effect on April 1, 2015. Management is recommending the approval of the attached standards; however reserves the right to make minor non-substantive changes or updates to the planning standards such as changes to links or references.

The revisions proposed by Management at this time were developed through the ISO stakeholder process with meetings, conference calls and ample opportunity for stakeholders to submit meaningful input. A majority of comments and suggestions from stakeholders that were submitted to the ISO were included in the attached versions of the ISO planning standards. A summary of stakeholder comments is provided in Attachment 3. There remain, however, fundamental dissenting views with the ISO planning standards that are further discussed below.

Management recommends that the Board approve the proposed ISO planning standards as attached herein.

Moved, that the ISO Board of Governors approves the ISO planning standards, stated in full in attachment 1 and 2, and as described in the memorandum dated September 11, 2014.

DISCUSSION AND ANALYSIS

The ISO planning standards have been revised to add necessary enhancements to the existing standards and guidelines, including the addition of new standards, and to remove outdated information and process requirements. The current planning standards have been in effect since 2011, and a stakeholder process to update them was initiated in April 2014. The following provides background and description of the proposed changes.

Planning Standard for High Density Urban Load Areas

The ISO is clarifying in the planning standards when load shedding through special protection systems (SPS) is considered an acceptable means to address planning needs for Category C contingencies¹. The planning standards currently provide guidelines regarding system implications of SPS operation and SPS design considerations that need to be taken into account, but do not currently address the current and historical practices regarding considerations of non-consequential load shedding² for Category C contingencies.

The ISO's current practice in local area planning, which is consistent with historical practices prior to and since the creation of the ISO, is to not rely upon high density urban load shedding as a long term planning solution for Category C contingencies; however, this practice has not previously been codified in the planning standards. Also, further clarification of the considerations in the viability of load shedding as a short term measure, or in lower density areas is also codified.

The ISO's current and historical practices received considerable scrutiny in the CPUC's 2012 Long Term Procurement Planning processes dealing with future local capacity needs (Track 1 and Track 4), and ISO staff conveyed Management's intention in that proceeding to reflect these current practices within the planning standards to provide better clarity and transparency regarding these issues. Specific reference to this intention was made by the CPUC in the Track 4 decision, Decision 14-03-004 March 13, 2014.

Extreme Event Reliability Standard

The ISO is required as a part of NERC Reliability Standard TPL-001-4 to study the effects of extreme events on the system; however, the standard does not require that mitigation be put in place for the extreme events. The ISO assessment conducted as a part of its 2013-2014 transmission planning process has determined that there are unique circumstances affecting the San Francisco Peninsula that form a credible basis for considering mitigation of risk of outages and of restoration times that are beyond the reliability standards applied to the rest of the ISO footprint and is therefore incorporating this planning requirement into the planning standards.

The characteristics that make it apparent that the San Francisco Peninsula is uniquely situated and requiring consideration of mitigation are the following:

¹ Category C contingencies result in the loss of 2 or more bulk electric system elements. These are commonly referred to as multiple contingency events.

² Non-consequential load shedding refers to load that is not dropped as a direct consequence of the contingency (e.g., load served by a radial line that is tripped out of service) but is instead dropped to mitigate other reliability issues caused by the contingency (e.g., overloads on other facilities).

- high density urban load area,
- geographic and system configuration,
- potential risks of outages including seismic, third party action and collocating facilities; and
- challenging restoration times.

The ISO will consider the overall impact of the mitigation on the identified risk and the associated benefits that the mitigation provides to the San Francisco Peninsula area. Other areas of the system may also be considered under this standard on a case-by-case basis as a part of the transmission planning assessments.

Updates required due to new NERC Transmission Planning Standards

The current ISO planning standard is based upon NERC reliability standards TPL-001, TPL-002, TPL-003 and TPL-004. NERC has been developing over the last number of years an update to the transmission planning standards, which among other changes consolidates the four existing TPL standards into one standard. NERC standard TPL-001-4, which has been approved by FERC, will replace the transmission planning standards TPL-001, TPL-002, TPL-003 and TPL-004. The new standard, TPL-001-4, is similar in principle and application as the current TPL-001 through 004 with some elevation of the requirements in the standard. The effective date for TPL-001-4 is spread over two years, as follows:

- Requirements R1 and R7 – January 1, 2015
- Requirements R2 through R6 – January 1, 2016

With the sequenced in-service date of the standard, the ISO will be conducting the studies for the 2014-2015 Transmission Planning Process applying TPL-001, TPL-002, TPL-003 and TPL-004. The ISO will ensure compliance to TPL-001-4 Requirements R1 and R7 as a part of the assessment. The ISO will apply TPL-001-4 for the 2015-2016 Transmission Planning Process.

To accommodate the changes to the NERC Reliability Standards the ISO has made a number of changes to the planning standards to reflect the new standard requirements. The ISO is recommending the revised planning standards (effective April 1, 2015) to reflect the requirements of TPL-001-4 for use in the 2015-2016 transmission planning process.

POSITIONS OF THE PARTIES

The stakeholder process started in April when the ISO posted a draft straw proposal for revisions to the planning standards and scheduled a stakeholder meeting on April 11, 2014. Following the first round of stakeholder comments, the ISO posted a revised draft on May 29, held a conference call on June 4, and solicited a second round of comments. Following

the second round of stakeholder comments, the ISO posted a final draft on July 16, held a conference call on July 28, and solicited a third round of comments.

The ISO incorporated the majority but not all stakeholder comments and suggestions in the planning standards that are attached to this memorandum as Attachment 1 and 2. The comments for the three areas revised in the planning standard are summarized below, and a more comprehensive summary of all rounds of stakeholder comments is provided in Attachment 3.

- Planning for High Density Urban Load Area Standard – Comments were received recommending that for all areas of the system, including high density urban load areas, that cost benefit analysis should be conducted to determine if system development is needed as opposed to load shedding when the resulting service standard is exceeding the requirements of the NERC Reliability Standards.

The ISO responded to the comments indicating that the NERC Planning Standards are written so that category C contingencies are mitigated through transmission upgrades, resource additions, or if the risks and consequences are acceptable then load shedding is sometimes acceptable. The planning standards supplement the NERC Planning standards, so that they can be consistently applied. The ISO's FERC-approved tariff sets out the framework for the development of standards to address issues beyond the NERC minimum requirements, and in considering mitigations necessary to meet these additional standards, economics are an important consideration in the selection of the recommended mitigation. In addition high density population areas are always served by a tightly meshed transmission network and loss of two transmission lines still results in multiple remaining transmission lines and resources to serve the load. Shedding high density urban load rather than building incremental transmission or resource additions is certainly not a reasonable option and it is not reasonable or feasible to perform a detailed analysis to accurately quantify the risks and cost exposure. Instead, the ISO practice is to deterministically acknowledge that the impacts of shedding the high density urban load over the long term are obviously unacceptable and efforts should be focused on evaluating the numerous mitigation options available that maintain the reliability of the system.

- Extreme Event Reliability Standard – Comments were received that were generally in support of the determination that the San Francisco Peninsula may warrant consideration of mitigation for extreme event contingencies. Commenters believed, however, that a detailed assessment of risk and benefits of the mitigation needs to be conducted before recommending mitigation.

The ISO responded that the revision to the planning standard reflects the unique characteristics of the San Francisco Peninsula area. While the NERC Reliability

Standards do not require the mitigation for extreme events, the revision to the ISO planning standard identifies that mitigation may be considered based upon the unique characteristics of the Peninsula area. The determination of need to mitigate and assessment of potential mitigation alternatives is conducted as a part of the ISO's annual transmission planning process. Within the 2014-2015 transmission planning process the ISO is continuing the assessment of risk and benefits of mitigation for extreme events in the Peninsula area.

- Updates required due to new NERC Transmission Planning Standards – There was general understanding that the NERC Standards are mandatory and the comments were generally for clarification to the wording.

Management responded to these concerns in written responses posted to the ISO public web site after each round of comments.

MANAGEMENT RECOMMENDATION

Management recommends approval of its proposal to revise the ISO planning standards to incorporate enhancements to the standards and to remove and adjust outdated information as described above. Upon Board approval, Management will use the revised planning standards in the 2014-2015 transmission planning process, with the exception of the changes required due to the new NERC standards. These changes will be incorporated into the ISO planning standards effective April 1, 2015 and will be used in the 2015-2016 transmission planning process.