Unofficial Comment Form for FAC-014-3
Project 2015-09 Establish and Communicate System Operating Limits

Do not use this form for submitting comments. Use the electronic form to submit comments on Project 2015-09 Establish and Communicate System Operating Limits (SOL). The electronic form must be submitted by 8 p.m. Eastern, Friday, August 12, 2016.

Additional information is available on the project page. If you have questions, contact Lacey Ourso, Standards Developer by email or phone at 404.446.2581.

Background Information regarding Project 2015-09 Establish and Communicate System Operating Limits
Before submitting comments with regard to the proposed changes to FAC-014-3, please review the background information section provided in the “Unofficial Comment Form for FAC-011-4.” That document contains foundational information that must be reviewed in order to have a complete understanding of the proposed changes to FAC-014-3.
## Proposed Revisions, Background Information and Questions

### Proposed Reliability Standard: FAC-014-3, Requirement R1

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| **R1.** Each Reliability Coordinator shall establish Interconnection Reliability Operating Limits (IROLs) for its Reliability Coordinator Area that are consistent with its System Operating Limit Methodology (“SOL Methodology”) as established in FAC-011-4. | The current FAC-014-2 Requirement R1 requires that the RC ensure SOLs and IROLs are established pursuant to its SOL Methodology. This creates a situation where the RC is responsible for “ensuring” actions out of its control. The proposed revisions do not change the intent of the standard—that the RC develop the SOL Methodology for establishing SOLs in its RC Area, and the TOP following the RC SOL Methodology in establishing those SOLs. Accordingly, the proposed Requirement R2 requires that the TOP establish SOLs as required by the RC SOL Methodology. The SDT believes this clarifies the appropriate responsibilities of the respective functional entities, while not creating ambiguity in the requirements in requiring the RC to do something that the TOP is, in all actuality, required to do. Additionally, this requirement carries forward the obligation of the RC to establish IROLs for its RC Area. The RC maintains primary responsibility for establishment of IROLs because these limits have the potential to impact a Wide-area. | **Mapping to existing FAC standards under revision:**
- FAC-014-2 Requirement R1 – Requires the RC to ensure SOLs and IROLs are establishing for its RC Area, consistent with its SOL Methodology.
- FAC-014-2 Requirement R2 – Requires the TOP to establish SOLs consistent with the RC SOL Methodology. |
**Question 1:** Do you agree with that the Reliability Coordinator (RC) should have primary responsibility for establishing IROLs for its RC Area? If not, please provide your comments on the appropriate break down of responsibilities (between RC and TOP) in establishing IROLs.

- [x] Yes
- [ ] No

Comments:

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### Proposed Reliability Standard: FAC-014-3, Requirement R2

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| **R2.** Each Transmission Operator shall establish SOLs for its portion of the Reliability Coordinator Area consistent with its Reliability Coordinator’s SOL Methodology. | The SDT has removed language from the existing FAC-014-3 Requirement R2 that states the TOP, “shall establish SOLs (as directed by its Reliability Coordinator)” because it causes confusion and may be incorrectly understood to mean that the RC will issue a “Directive,” or that TOPs are only required to establish SOLs if they have been “directed to by their RC.” This is not the intended meaning of the requirement, thus, the drafting team has removed the unnecessary and potentially confusing language. The proposed language makes clear that the TOP is the entity responsible for establishing SOLs, and these SOLs must be established in accordance with *(i.e., pursuant to the “direction”)* identified in the RC’s SOL Methodology. | **Mapping to existing FAC standards under revision:**
  - FAC-014-2 Requirement R1 – Requires the RC to ensure SOLs and IROLs are establishing for its RC Area, consistent with its SOL Methodology.
  - FAC-014-2 Requirement R2 – Requires the TOP to establish SOLs consistent with the RC SOL Methodology. |

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**Question 2:** The proposed revisions work together with the proposed revisions to the definition of SOL. The new requirement makes clear that the TOP will establish SOLs in accordance with the RC SOL Methodology. This means that the TOP will follow the RC Methodology to determine: applicable Facility Ratings for use in operations (see, proposed FAC-011-4 Requirement R2); applicable steady-state System
Voltage limits to be used in operations (see, proposed FAC-011-4 Requirement R3); and, the applicable stability limitations, if any, that are to be used in operations (see, proposed FAC-011-4 Requirement R4). Do you believe that it is clear that the TOP must establish SOLs in accordance with what is outlined in the RC Methodology?

- Yes
- X No

Comments: Because of the need to refer to FAC-011-4, FAC-011-4 and FAC-014-3 should be combined into one standard.

Requirement R2 makes it clear that the Transmission Operator must establish IROLs, but as we commented on FAC-011-4, the owner of the equipment needs to be involved with the development of Facility Ratings. That will have to be considered in the applicability of FAC-014-3.

**Question 3**: TOP application of the RC Methodology will always result in identification of the appropriate Facility Ratings and steady-state System voltage limits, however, it may not always result in identification of stability limitations (this is only if there are no applicable limitations specific to the TOP). If there are appropriate stability limitations (identified as a result of implementing the RC method for determining the stability limitations in proposed FAC-011-4 Requirement R4), then the TOP will identify these SOLs. Do you believe this is clear from the language of the requirements (both in FAC-14-3 Requirement R2 combined with the proposed revisions to FAC-011)?

- Yes
- X No

Comments: Because of the need to refer to FAC-011-4, FAC-011-4 and FAC-014-3 should be combined into standard.

### Proposed Reliability Standard: FAC-014-3, Requirement R3

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| **R3.** Each Reliability Coordinator shall determine stability limitations to be used in operations when the limitation impacts more than one Transmission Operator in | The proposed approach by the SDT is that the RC SOL Methodology will set the method for how all stability limitations for its RC Area must be established (see, proposed FAC-011-4 Requirement R4). The RC SOL Methodology must, among other things, specify the stability performance criteria | **Mapping to existing FAC standards under revision:**  
  - N/A: This proposed requirement addresses what the SDT believes to |
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<td>its Reliability Coordinator Area consistent with its SOL Methodology.</td>
<td>for single Contingencies and multiple Contingencies, including any margins applied (see, proposed FAC-011-4 Part 4.1); meet the performance criteria for certain identified Contingencies listed in the standard (see, proposed FAC-011-4 Part 4.2); and describe how instability risks are identified (see, proposed FAC-011-4 Part 4.3). The TOP is required to establish stability limitation SOLs in accordance with everything outlined in the RC SOL Methodology. However, in addition to what is outlined above, the SDT believes that to the extent there are stability limitations that may impact more than one TOP in its RC Area, the RC should be responsible for determining these stability limitations (in accordance with its RC SOL Methodology – see, proposed FAC-011-4 Part 4.6). The purpose of providing a separate requirement for the RC to address this specific type of stability limitation is to provide clarity that there may be a stability limitation that is not appropriately labeled an “IROL,” and thus, would not be covered by proposed Requirement R1. It is the position of the SDT that not all stability limitations are automatically “IROLs.” For example, there may be instances of local, contained instability that are not appropriately designated an “IROL,” because labeling it as an IROL may require the TOP to take actions such as pre-Contingency load shedding,</td>
<td>be a gap in the existing requirements.</td>
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**Proposed Reliability Standard: FAC-014-3, Requirement R3**

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<td>that is not warranted, and could actually cause a bigger reliability impact. However, when the stability limitation impacts more than one TOP, the SDT believes the RC should have primary responsibility for establishing that SOL.</td>
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**Question 4:** Do you believe that the RC should be responsible for establishing stability limitations used in operations where more than one TOP is impacted?

- [x] Yes
- [ ] No

Comments:

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**Proposed Reliability Standard: FAC-014-3, Requirement R4**

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| **R4.** Each Reliability Coordinator shall provide the SOLs for its RC Area to adjacent Reliability Coordinators within an Interconnection and Reliability Coordinators who request and indicate a reliability-related need for those limits, and to the Transmission Operators, Transmission Planners, and Planning | The proposed Requirement R4 maintains the part of existing FAC-014-3 Requirement R5 which requires the TC to send the SOLs for its RC Area to adjacent RCs. The SDT has created a new/separate requirement related to communicating established IROLs (see proposed FAC-014-4 Requirement R5). The SDT added Part 4.1 to require the RC to provide updates to the SOLs to the impacted TOPs. It is expected that the RC | **Mapping to existing FAC standards under revision:**
- FAC-014-2 Requirement R5 – Requires the TOP to establish SOLs consistent with the RC SOL Methodology. |
## Proposed Reliability Standard: FAC-014-3, Requirement R4

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| Coordinators within its Reliability Coordinator Area.  
**4.1.** The Reliability Coordinators shall provide any updates to the SOL values established as part of Requirement R1 or Requirement R3 to impacted TOPs in its Reliability Coordinators Area in a mutually agreeable periodicity and format. | and TOPs will establish a mutually agreeable means (pursuant to IRO-010-2 and TOP-003-3) for exchanging dynamically determined Facility Ratings or stability limitations. |
**Question 5:** Do you agree that the RC should be the only entity responsible for providing other entities within its RC Area the established SOLs? If no, do you believe the entity that establishes the SOL (either the RC or the TOP) should be the entity that communicates the SOL to other entities? Please explain.

- Yes
- No

Comments:

**Question 6:** With regard to proposed Part 4.1: Do you believe that the language provides sufficient clarity regarding what is required for communicating updates to dynamically updated limits? If not, what language do you propose?

- Yes
- No

Comments: Because of the importance of operating to SOLs, the time to communicate updates needs to be specified. Propose the following wording to Part 4.1:

The Reliability Coordinators shall provide any updates to the SOL values that affect System Operating Limits established as part of Requirement R1 or Requirement R3 to impacted TOPs in its Reliability Coordinator Area within 15 (fifteen) minutes of being calculated.

**Question 7:** With regard to proposed Part 4.1: Do you believe a specific timeframe should be included that sets the minimum acceptable time for when the RC must provide the communications, or should the RC have flexibility in determining what is appropriate for its particular RC Area?

- Yes
- No

Comments: See the response to Question 6.
### Proposed Reliability Standard: FAC-014-3, Requirement R5

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| **R5.** Each Reliability Coordinator with an established IROL shall provide the following IROL information to adjacent Reliability Coordinators within an Interconnection, to other Reliability Coordinators that indicate a reliability-related need for the information, and to the Transmission Operators, Transmission Planners, and Planning Coordinators within its Reliability Coordinator Area: | See above explanation. This requirement was previously combined with the requirement to provide updates to both SOLs and IROLS (existing FAC-014-3 Requirement R5). The SDT separated these into two requirements – one for SOL and one for IROL – so that greater detail could be provided regarding the type of IROL-information that must be communicated by the RC. | **Mapping to existing FAC standards under revision:**  
• FAC-014-2 Requirement R5 – Requires the TOP to establish SOLs consistent with the RC SOL Methodology. |
| **5.1.** Identification of the Facilities that are critical to the derivation of the IROL. | | |
| **5.2.** The value of the IROL and its associated IROL $T_v$. | | |
| **5.3.** The associated Contingency(ies). | | |
| **5.4.** The type of limitation represented by the IROL (e.g., voltage collapse, angular stability). | | |
**Question 8:** Do you agree with the information identified in Parts 5.1 through 5.4? Is there any additional information that the RC should provide regarding IROLs? Are there any additional entities that should be included in this requirement and receive the information from the RC?

- [ ] Yes
- [x] No

**Comments:** The only information that needs to be provided are Part 5.2 (IROL and IROL Tv), and Part 5.4 (IROL type). Parts 5.1 and 5.3 only need to be known internally to the RC.

### Proposed Reliability Standard: FAC-014-3, Requirement R6

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| **R6.** Each Reliability Coordinator with an established IROL shall provide the following IROL information to Transmission Owners and Generation Owners within its RC Area:  
**6.1.** Identification of the Facilities that are owned by that entity, which are critical to the derivation of the IROL. | In [FERC Order No. 777](https://www.ferc.gov/indiana.pdf), FERC directed NERC to develop a means to assure that IROLs are communicated to transmission owners (see, P6 and P41). The purpose of this proposed requirement is to address the concerns raised by FERC in Order No. 777. The RC is required to provide the IROL information identified in Part 6.1 to Transmission Owners and Generator Owners in its RC Area. The SDT included Generator Owners because it believes that GOs, in addition to TOs, need to receive information relating to facilities that are critical to the derivation of the IROL. The SDT did not combine this with proposed Requirement R5 because the team believes that the owners only need IROL information related to their facilities that are critical to the derivation of the IROL. However, the owners do not need the information identified in proposed Parts 5.2 through Part 5.4, and further, this information may contain sensitive. | **Mapping to existing FAC standards under revision:**  
- **N/A:** This proposed requirement is intended to address the issues raised in FERC Order No. 777. |
**Proposed Reliability Standard: FAC-014-3, Requirement R6**

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<td>operator information not appropriate for open-ended sharing.</td>
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**Question 9:** In consideration of the FERC directive regarding communicating IROL information to the Transmission Owner, do you agree with this proposed new requirement? If not, please explain the basis for why you do not support the proposed requirement, and the alternative language you are proposing to address the issues raised in FERC Order No. 777.

- [x] Yes
- [ ] No

Comments: Suggest Requirement R6 to read:

R6. Each Reliability Coordinator with an established IROL shall provide to the Transmission Owners and Generation Owners identification of the Facilities they own that are critical to the derivation of that IROL.

**Question 10:** Do you believe a specific timeframe should be included that sets the minimum acceptable time for when the RC must provide the information to the Transmission Owner and Generator Owner?

- [x] Yes
- [ ] No

Comments: The Transmission Owners and Generation Owners should be notified within 15 minutes after their facilities are determined to be critical to the derivation of the IROL.
### Proposed Reliability Standard: FAC-014-3, Requirement R7

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| **R7.** The Transmission Operator shall provide any SOLs and updates to those limits to its Reliability Coordinator and to the Transmission Service Providers that share its portion of the Reliability Coordinator Area. | The SDT did not make substantive changes to this requirement; however, the requirement previously existed as a “part” of a requirement and it is now a stand-alone requirement. | **Mapping to existing FAC standards under revision:**  
• FAC-014-2 Part 5.2 – Requires the TOP to provide its SOLs to the RC and Transmission Service Providers in its portion of the RC Area. |

**Question:** None.

### Proposed Reliability Standard: FAC-014-3, Requirement R8

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| **R8.** Each Planning Coordinator and Transmission Planner shall communicate the results of the stability analysis identified in its Planning Assessment and Transfer Capability assessment to each affected Reliability Coordinator and Transmission Operator. This shall include: | Under proposed FAC-011-4 Part 4.4, the RC SOL Methodology must consider the stability limitations provided by the Planning Coordinator. Also, proposed FAC-014-3 Requirements R2 and R3, the applicable entities are required to establish stability limitations (if any) in accordance with the RC SOL Methodology. This requirement is intended to complement proposed FAC-011-4 Part 4.4 by ensuring that the planning entities provide the results of their stability | **Background regarding existing standards not under revision by SDT:**  
• TPL-001-4  
• FAC-013-2  

**Mapping to existing FAC standards under revision:**  
• FAC -011-3 Part 3.3 |
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<td><strong>8.1.</strong> The type of the instability (e.g., voltage collapse, angular instability, transient voltage dip criteria violation);</td>
<td>analysis, including a list of those contingencies that are expected to produce the more severe System impacts, to the affected RC and TOP. This information may be relevant to the operating conditions for which the RC and TOP are determining SOLs. Further, FAC-013-2 requires that the PC have a methodology and annual assessment that identifies the weaknesses and limiting Facilities that could limit the ability of the Transmission System to reliably transfer energy. The results of the assessment, including the methodology used in the analysis, may contain information that may be relevant to the RC and TOP analysis for determining SOLs (and IROLs).</td>
<td>FAC-014-2 Requirement R6</td>
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<td><strong>8.2.</strong> The Contingencies which result in the instability;</td>
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<td><strong>8.3.</strong> Any Remedial Action Scheme action, under voltage load shedding (UVLS) action, under frequency load shedding (UFLS) action, interruption of Firm Transmission Service, or Non-Consequential Load Loss that was employed (or invoked) to address the instability; and,</td>
<td></td>
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<td><strong>8.4.</strong> Any Corrective Action Plan associated with the instability.</td>
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**Question 11:** Do you agree that there is a reliability-related need for the RCs and TOPs to obtain the information from the Planning Assessment and Transfer Capability analysis for the purpose of identifying instability risks when establishing SOLs (and IROLs)? Are there other “studies” that are currently performed that should also be included in this communication requirement?

☑ Yes
☐ No

Comments: Because equipment may be automatically removed from service without a Fault condition or equipment failure, Part 8.2 should be revised to read:

8.2 The Contingencies or removals from service of equipment which result in the instability

**Question 12:** Are there additional “studies” or activities that planners should undertake (beyond those currently required in the current standards, including TPL-001-4 and FAC-013-2) to identify instability risks? If so, please describe.

☐ Yes
☐ No

Comments:

**Question 13:** With regard to Part 8.3: The SDT believes that the information listed in Part 8.3 is critical for RC and TOP awareness and understanding of the instability risks identified in the planning horizon and the listed mitigation measures employed to address those risks. Do you agree? If not, please explain why you believe it is not critical that the RC and TOP obtain this information from the planning entities?

☑ Yes
☐ No

Comments:

**Question 14:** Do you agree that this proposed requirement is appropriately placed in FAC-014, or do you believe the proposed requirement should be placed in another standard (i.e., TPL-001-4 and FAC-013-2)?

☐ Yes
☑ No

Comments: Belongs in FAC-013-2 and TPL-001-4. Should not have to refer between standards.