WECC Unscheduled Flow Reduction Guideline

The content of this document is an excerpt of the WECC Unscheduled Flow Mitigation Plan Document posted on www.wecc.biz.

WECC Guideline:
UNSCHEDULED FLOW REDUCTION GUIDELINE

Introduction
The combination of Scheduled and Unscheduled Flows (USF) on a Transfer Path may exceed the transfer capability of that Transfer Path. This Unscheduled Flow Reduction Guideline (Guideline) can be used by the Qualified Transfer Path Operator to reduce the USFs across a constrained Qualified Transfer Path.

Guideline
The WECC Guideline addresses the prescribed method of mitigation for USF and the details for its implementation. This Guideline recognizes the effectiveness of coordinated control and operation of the Qualified Controllable Devices installed within the WECC systems. It is subject to modification as provided in Section 4.2 of the WECC Unscheduled Flow Mitigation Policy (Policy).

The entities that the Guideline applies to are:
Balancing Authority (BA)
Reliability Coordinator (RC)
Transmission Operator
These entities may also be impacted by the Guideline:
Interchange Authority
Load-Serving Entity
Purchasing-Selling Entity
Transmission Service Provider
WECC UNSCHEDULED FLOW REDUCTION GUIDELINE

The combination of Scheduled and Unscheduled Flows on a Qualified Transfer Path may exceed the System Operating Limit (SOL) of that Transfer Path. This Guideline will be used to reduce the USF across a constrained Qualified Transfer Path. The Guideline has the following parts:

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Terms that are initially capitalized in this Guideline refer to defined terms in the WECC Unscheduled Flow Mitigation Policy.

1. **Transfer Path Qualification**

   Requests for Transfer Path qualification shall be made directly to the Unscheduled Flow Administrative Subcommittee (UFAS). To qualify a Transfer Path under this Guideline, a Transfer Path Operator must specify the applicable direction and provide documentation to satisfy the requirements for qualification set forth below:

   a. The Transfer Path must be a transmission element or elements across which:
      - a Schedule (in MW) can be established;
      - actual flow (MW) is metered; and
      - an SOL has been established and published in WECC Planning Coordination Committee or WECC Operating Committee (OC) documents.
b. A historical record exists to document that, concurrently:
   - For at least 100 hours in the most recent 36 months, actual flow across a Transfer Path (MW) has exceeded 97 percent of the SOL in megawatts; and
   - Energy Schedules were curtailed because of the USF.

c. The Transfer Path Operator shall request to be included on the UFAS agenda at a future scheduled meeting to make a presentation on qualifying the Transfer Path. The presentation to the UFAS will explain how the SOL was determined and how the historical actual flow and/or Schedule curtailment records were obtained.

d. An incremental power flow for the current operating season confirming that a feasible combination of Schedules between Sender and Receiver can create USF across the proposed Transfer Path. The power flow must be applicable to the proposed Transfer Path and the path’s USF sum must be equal to or greater than 5 percent of the SOL.

e. The Transfer Path Operator shall conduct the studies and provide supporting documentation as needed to satisfy the requirements for qualification defined in Section 1 of this Guideline.

f. The Transfer Path Operator shall provide the following documentation to the UFAS:
   - Description of series-connected Controllable Devices in the path that can be used to reduce USF, as set forth in Section 9.a.ii. SECOND STEP.
   - Description of any unique operating procedures or agreements that might affect the WECC USF plan if the path is qualified.
   - Description of USF comparison to other paths available to the Transfer Path Operator as per the Guideline, Section 8.b.

g. The Transfer Path Operator, Qualified Transfer Path Operators with representation on the UFAS, and WECC staff shall provide a description of any known simultaneous operating conditions that may limit Controllable Device coordination to the UFAS.

h. WECC staff shall develop a sample analysis showing the impact of the proposed path on the compensation table.

i. After the UFAS has reviewed the documentation and presentation, a recommendation will be forwarded to the WECC OC. The Transfer Path Operator may be requested to make a presentation to the WECC OC.

j. Upon approval by the WECC OC, the Transfer Path will be added to the list of Qualified Transfer Paths on the effective date to be determined by the WECC OC. If this occurs during a Plan Year (January 1 – December 31), the
compensation to the qualified Controllable Device owners will be prorated accordingly.

k. A Transfer Path is normally qualified for USF reduction in only one direction. The Transfer Path may be qualified for USF reduction in both directions, but supporting data must be provided for each direction.

2. **Transfer Path Requalification**

If there is a change in the SOL for an existing Qualified Transfer Path or the addition of a Controllable Device in the Qualified Transfer Path, the Qualified Transfer Path Operator shall make a presentation to the UFAS so that the UFAS can determine whether requalification of the Qualified Transfer Path is necessary.

3. **Qualified Transfer Path Deletion**

If the following conditions are maintained for 36 consecutive months, the UFAS shall make a determination as to whether the WECC system configuration has been altered sufficiently so that USF Schedule reductions on the Qualified Transfer Path would no longer be expected:

- There have been no Schedule reductions; and
- The actual flow across a Qualified Transfer Path has not exceeded 97 percent of the SOL.

An affirmative finding of the UFAS and approval by the WECC OC will be required to delete a Qualified Transfer Path.

4. **Actions Required Following Addition of a New Qualified Transfer Path**

a. A new Transfer Path will be added to WECC’s list of Qualified Transfer Paths, attached as Exhibit A, on approval of the WECC OC.

b. Owners of facilities that comprise the new Qualified Transfer Path will designate a Qualified Transfer Path Operator.

c. Incremental power flow matrices will at a minimum be prepared for the current summer and winter seasons. These matrices will be:

- based on appropriately-modified operating base cases for each Qualified Transfer Path;
- provided to the WECC OC members;
- based on incremental power flow studies; and
5. **Controllable Device Qualification**

a. Any applicable entity wishing to qualify a Controllable Device to receive compensation for coordinated operation under the Policy shall present a plan for coordinated operation to the UFAS. This plan should include the following elements:

- The procedures are developed to ensure that adequate communication and coordination occurs between the operator of the applicable entity’s proposed Controllable Device and the operators, including the RC, of other Qualified Controllable Devices.

- The sponsoring applicable entity and/or WECC staff shall conduct studies to demonstrate the proposed Controllable Device USF effectiveness and impacts on the WECC system. They will present these results to the UFAS and demonstrate that the applicable entity’s Controllable Device meets the criteria specified below:

  The demonstration will use the methodology in the USF Mitigation Criteria for Controllable Devices Compensation.

  The demonstration will show that by adding the applicable entity’s controllable Device to the overall coordinated Controllable Device control strategy, the proposed Controllable Device will reduce USF:

  1) by an average over all of the then-Qualified Transfer Paths of at least 1 percent of the respective Qualified Transfer Path limits, (which corresponds to average percent control of 6.7 percent in Table 1 of the Controllable Devices Compensation Guideline), and

  2) for more than half of the Qualified Transfer Paths, by at least 1 percent of each of the respective Qualified Transfer Path limits.

b. The sponsoring applicable entity shall provide the following documentation to the UFAS:

- Brief written description including simplified one-line diagram(s) for

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1 A "Contributing Schedule" is the net Schedule between individual Senders and Receivers that contributes USF across a Qualified Transfer Path in the same direction as the actual flow across that Qualified Transfer Path.
6. Qualified Controllable Device Deletion
   a. A Qualified Controllable Device shall be considered by the UFAS for deletion from the list of Qualified Controllable Devices if the Qualified Controllable Device is no longer capable of reducing USF on the current Qualified Transfer Paths, by the criteria specified in Section 5.a above.
   b. Approval of the WECC OC will be required to delete a Qualified Controllable Device. The Controllable Device will no longer be required to participate in coordinated operation. However, its continued participation is encouraged.

7. General Terms
   a. All applicable entities shall cooperate with the Qualified Transfer Path Operator by reducing Schedules as requested to achieve the appropriate reduction in USF. If a BA desires to provide the relief through alternative means, that relief must be equal to or greater than the relief that would be provided through curtailment of the Schedules.
   b. Applicable entities having Controllable Devices in series or parallel — such as series capacitors, phase shifting transformers, and DC transmission lines — shall
c. To the extent that a Controllable Device is capable of operating to achieve Actual Flows through the device equal to Scheduled Flows, such Schedules shall be deemed to be 100 percent effective through the device and thus shall be exempt from the Schedule reductions required under this Guideline.

For example, a Phase Shifting Transformer (PST) operator has the option to use the operation of that device to satisfy some or all of its path flow relief obligation under the Schedule Curtailment phase of the Policy. The curtailment phase of the Guideline specifies that applicable entities shall make adjustments to contributing import Schedules — in accordance with a set of matrices — to provide a reduction in USF to the constrained path.

In certain circumstances, it may be desirable for an applicable entity to provide some or all of the prescribed flow reduction through the operation of Controllable Devices (e.g., PSTs) such that the combined action would provide equivalent flow relief to the path. The following explains how that is accomplished:

- An applicable entity that owns/operates a Controllable Device shall not be granted exemption from its obligation to provide the additional relief prescribed in the Schedule Curtailment phase of the Guideline.
- Under the Guideline, Qualified Controllable Devices are used to the maximum extent possible for mitigating the USF on a constrained path.
- If the collective relief provided by these Qualified Controllable Devices is insufficient, requiring advancement to the Schedule curtailment phase of the
Guideline, then all applicable entities (including the Qualified PST owners) are required to provide additional relief, typically in the form of Schedule curtailments.

- While the Qualified PSTs are providing relief to the constrained path, compensation is already allocated to the Qualified PST owners through the financial provisions of the Policy.

In the situation where a PST is being operated so that Actual Flow equals Scheduled Flow (holding Schedule), there will be zero USF on the path that is directly controlled by the PST. However, there will generally be USF created at other points in the network due to the various parallel paths that exist between the sending area and the controlled transmission element.

The exception to this will be the case where the sending and receiving areas are located immediately adjacent to one another. In this instance, if the flows are being held equal to Schedule, then no other USF is being generated by that Schedule. As such, the following rule applies:

Interchange Schedules between immediately adjacent Balancing Authorities through a phase shifting transformer or other Controllable Device shall be exempt from curtailments under the Unscheduled Flow Mitigation Policy when the actual flow is controlled equal to the Scheduled amount.

The above language applies to both Qualified and non-Qualified PSTs.
Therefore, while an owner/operator of a Controllable Device is not exempt from the Schedule curtailment phase of the Guideline, those Import Schedules from adjacent BAs that are being controlled by the PST to yield zero USF are exempt from consideration for curtailment.

d. The WECC staff will provide the WECC OC with a summary of all Qualified Controllable Devices that are being operated in a coordinated manner pursuant to the Policy, whenever a new Controllable Device is qualified.

8. **General Action Rules**

a. This Guideline applies to all applicable entities. The UFAS shall develop and/or modify this Guideline to enable the Qualified Transfer Path Operators to implement actions that will achieve the desired control/curtailment results in the scheduling hour immediately following the request. The Guideline shall ensure that neither over-control nor over-curtailment shall be expected.

b. The Qualified Transfer Path Operator will verify the magnitude of USF across the Qualified Transfer Path by checking adjacent metered and scheduled values prior to requesting any other applicable entities take actions under this Guideline. Actual Flow must reach a level greater than or equal to 95 percent of the Path’s
SOL, with Actual Flows greater than the Scheduled Flows by an amount of 2 percent of the Qualified Transfer Path SOL or 25 MW, whichever is greater.

c. Qualified Transfer Path Operators should consider the USF impact of their BA ACE, if applicable, contributing to USF prior to requesting USF reduction. RCs should consider the USF impact of neighboring BA ACE prior to taking action.

d. The UFAS shall review the participation of Qualified Controllable Devices regarding each device’s participation in USF events.

e. The major loop USF will be monitored in a minimum of two locations during hours in which any coordinated operation of the Qualified Controllable Devices or curtailments are occurring under this Guideline.

f. The Qualified Transfer Path Operator will continue to take actions necessary to reduce Actual Flow to a level at or below the SOL of the Qualified Transfer Path.

g. Upon request from the Qualified Transfer Path Operator for USF relief, applicable Schedule reductions will occur or equivalent alternative actions will be implemented to provide required relief in accordance with the following actions:

- Upon approval of Qualified Transfer Path Operator request by the RC, the curtailment calculation tool will initiate a prescription for Schedule reductions that will result in the megawatt relief requested by Qualified Transfer Path Operator. BAs will receive curtailment prescriptions for Schedules sinking within their boundaries, and upon receipt of the curtailment prescription, shall take action to approve prescribed Schedule reductions; or

- BAs may arrange to provide relief called for by this Guideline in a manner other than prescribed, provided that the arrangements are as effective as the identified Schedule reduction in reducing USF across the Qualified Transfer Path.

h. In the event of a transmission system emergency on any applicable entities’ system, such applicable entity may request that the RC initiate coordinated operation of the Qualified Controllable Devices if such operation is reasonably expected to assist in relieving the emergency condition.

i. Each hour is deemed to be a separate event for USF reduction purposes. The Qualified Transfer Path Operator shall reissue USF events each hour that relief is called for.

j. During a USF event, all applicable entities cooperate with the Qualified Transfer Path Operator to reduce Schedules as requested to achieve a reduction in USF on the Qualified Transfer Path. While this Guideline is in progress, creation of new transactions or increases in existing transactions may have an adverse impact on USF on the Qualified Transfer Path and reduce the effectiveness of any designated Schedule curtailments. It is recognized that complete prohibition...
of scheduling during a USF event, regardless of the minor impact on the Qualified Transfer Path, is not desired.

The following identifies how changes to Schedules will be treated during a USF event:

- **Identification of Pre-Event Schedules**
  At the time a USF Curtailment Action is initiated, Schedules are established by the existence of confirmed tags. Schedule curtailments apply to transactions in the "Confirmed" state at the time of the USF event is requested by the Qualified Transfer Path Operator.

- **Restricted Transactions**
  A Restricted Transaction is either:
  - a new transaction with a Transfer Distribution Factor (TDF) on the Qualified Transfer Path equal to or greater than 10 percent in the qualified direction; or
  - the increase in a Pre-Event Schedule, with a TDF on the Qualified Transfer Path equal to or greater than 10 percent in the qualified direction.
  - Restricted transactions approved after a USF Curtailment Action is issued will become Confirmed Interchange based upon tag approvals, and then immediately curtailed to zero or Pre-Event Scheduled amounts for the effective time of the USF event. For all subsequent hours shown on the tag, the modified profile will be included in the list of Pre-Event Schedules. Future modifications to the tag will be treated as a new tag and the time it became a Confirmed Transaction will be used to determine whether it is a Pre-Event Schedule or Restricted Transaction.

9. **Action Steps**

The Qualified Transfer Path Operator shall advise the applicable entities, via the WECC communications system and the curtailment calculator tool, of a current or an impending curtailment period and may request assistance in mitigating the curtailment.

When assistance is requested in mitigating a curtailment, the following actions shall become effective at the start of the next scheduling hour following the request.

a. **Actions Taken**
   - **First Step:** The Qualified Transfer Path Operator shall advise the RC of the situation and intended action.
   - **Second Step:** To the extent a Qualified Transfer Path Operator has the right
to make use of Controllable Devices — such as series capacitors, phase shifting transformers, and DC transmission lines — these elements will be used to the maximum extent practical in reducing the USF across the constrained Qualified Transfer Path to a level at or below the SOL. Operations of such Controllable Devices shall comply with the NERC and WECC standards and criteria.

- **Third Step:** Before invoking the third step (or higher) of the Guideline, a Qualified Transfer Path Operator must ensure the actual flow on the Qualified Path must reach a level greater than or equal to 95 percent of the Path’s SOL, with Actual Flows greater than the Scheduled Flows by an amount of 2 percent of the Qualified Transfer Path SOL or 25 MW, whichever is greater.

Once the flow has been verified by the Qualified Transfer Path Operator, the operator will request that the RC initiate Coordinated Operation of Qualified Controllable Devices and issue a notification of moving to the third step via the WECC communications system and the curtailment calculator tool. The RC will notify operators of Qualified Controllable Devices.

At the request of the RC and in coordination with the Qualified Transfer Path Operator, the Qualified Controllable Device operators shall operate their Controllable Devices in a coordinated manner so as to minimize the USF on the constrained Qualified Transfer Path, consistent with NERC and WECC standards and criteria. This may happen at any time in the event.

- **Fourth Step:** If the previous steps did not address the Qualified Transfer Path loading issue, the Qualified Transfer Path Operator — in coordination with the RC — shall determine the amount of relief needed based on Actual Flows on the Qualified Transfer Path. The Qualified Transfer Path Operator will then request a level of megawatt relief needed through the curtailment calculator tool. Based on the level of relief requested, the curtailment calculator tool will prescribe a relief requirement solution of Schedule curtailments. The process used to determine the curtailment order is detailed in Attachment A. The approval of USF reduction shall be issued prior to 30 minutes before the start of the hour for which it is to be in effect.

b. **Rapid Advancement of the Steps**

The effective management of USF in the Western Interconnection can, at times, demand quick response and activation of this Guideline.

The following general guidance is provided for a Qualified Transfer Path Operator to use in making decisions regarding which steps of the Guideline should be used in the initial phases of USF reduction. Experience and identification of patterns with respect to Qualified Transfer Path overloading will affect the timing of the initiation of the Guideline by the Qualified Transfer Path...
Operator. The intent of this section is to enable the Qualified Transfer Path Operators to more rapidly implement actions under the Guideline that will achieve the desired USF relief.

Guidance

- Based on previous and recent experience with Qualified Transfer Path USF, the Qualified Transfer Path Operator may initiate the Guideline at any step, up to and including the Fourth Step. The Qualified Transfer Path Operator must be able to demonstrate through recent experience or other equivalent judgment, that the overload of the Qualified Transfer Path is severe enough to warrant the actions of the particular step being requested.

- If Rapid Advancement is requested by the Qualified Transfer Path Operator, the coordinated operation of the Qualified Controllable Devices shall occur as soon as possible, but prior to the ramp for the next hour.

10. Competing Paths

With the number and location of Qualified Transfer Paths within WECC, and the interrelation of power flows on these various paths, at times coordinated operation of Qualified Control Devices and Schedule curtailments may be necessary for more than one Qualified Transfer Path at a time. The following guidance provides direction for coordinated operation and Schedule curtailment methodology.

Step 3 Guidance

When encountering competing requests for coordinated operation, best efforts will be made by the RC to coordinate the settings of the available Qualified Controllable Devices to maximize the total USF relief to both competing Qualified Transfer Paths. Actions will not be directed by the RC without first considering the effects of those actions on the USF on each of the competing Qualified Transfer Paths, as well as the effects on other transmission facilities within the Interconnection.

Congestion of multiple Qualified Transfer Paths can occur either as a result of the operation of coordinated Qualified Controllable Devices for one path (which causes another path to exceed its flow limits), or may simply result from normal system operation (two paths encounter congestion simultaneously as load and generation patterns change).

When two Qualified Transfer Paths become congested, the operators of those paths are expected to coordinate their needs for relief with the RC and with each other. The RC, in monitoring the Qualified Transfer Paths, will generally be aware of path flow interactions and the interactions between the Qualified Controllable Devices that are used to relieve congestion.
The RC should coordinate at a pace that is slow enough and, to a degree that is slight enough, to minimize congestion on paths that are parallel to a given Qualified Transfer Path. The RC should direct operation of the Qualified Controllable Devices so that the highest amount of relief that is practical may be achieved. Certain instances of path interaction will result in less than maximum relief for both of the constrained paths.

Step 4 Guidance

In a situation where two Qualified Transfer Paths are competing for USF relief, certain curtailment prescriptions for Schedules, if implemented, may cause USF relief for one path but result in an increase in USF on the other. As such, Schedule adjustments should be implemented in a way that will generally result in reduced levels of USF for both paths.

Due to the complex interaction of Schedules and flows on the competing paths, the curtailment calculator tool logic has been developed to prescribe the curtailment actions to be taken under competing path events. This process is identical in operation to how the individual transfer path process is used. However, it incorporates logical tests to ensure that curtailment actions will only be advised for those instances where the curtailment will be significantly beneficial to one (or both) path(s) without being significantly detrimental to the other. The curtailment calculator tool is populated with the “adjusted contribution percentages” according to the logic described below:

For a given Schedule:

1) If the Schedule has a positive contribution (increasing USF) on both of the competing paths, this Schedule is subject to curtailment by an amount that corresponds to the larger of the two contribution percentages.

2) If the Schedule has a negative contribution (decreasing USF) on both of the competing paths, this Schedule should not be curtailed.

3) If the Schedule has a positive contribution to the first path, but a negative contribution to the second path, the Schedule is subject to curtailment only if the positive contribution percentage divided by the rating of the first path is greater than two times the negative contribution percentage divided by the rating of the second path. If this is not true, the Schedule should not be curtailed.

The table below includes specific examples of typical Schedules, and the corresponding “adjusted contribution” percentages.

Path 36/66 Competing Path Event Example:
The Competing Path Methodology incorporates the above logic and displays simply the “adjusted contribution” percentages. For example, if both Path 36 and Path 66 were calling for Schedule curtailments, a system operator would consult the information for “Path 36/66 Competing Path Event” and determine Schedule adjustments based on the contribution percentages indicated. This logic is included in the curtailment calculator tool.

While it is possible that any two Qualified Transfer Paths may become simultaneously constrained to the point where the curtailment of contributing Schedules is necessary, experience with the patterns of USF has shown that the most likely pair is Path 36 and Path 66.

### Additional Guidance for Schedule Curtailments (two Qualified Paths constrained)

In instances where two paths are requesting contributing Schedule curtailment under the Guideline, the RC will send a message via WECC communication system alerting the applicable entities of this fact. The RC message will specifically state that the situation is a “competing path” event, which requires a unique response from the applicable entities.

### 11. Further Action

The Qualified Transfer Path Operator will continue to take actions necessary to
reduce Actual Flow to a level at or below the SOL.

12. **Term**

   This Guideline will remain in effect for the duration of the Policy.
WECC UNSCHEDULED FLOW GUIDELINE
Attachment A: Summary of Curtailment Actions

Detailed Process
The process to determine the curtailment priority essentially divides Confirmed e-Tags into 16 groups, based upon the transmission priority and the contract path on which a transaction is scheduled. If a transaction is scheduled on the qualified path needing relief, it is considered an on-path Schedule. If a transaction is scheduled on a different path but still impacts the qualified path due to a TDF greater than the minimum acceptable level, it is considered an off-path Schedule.

For on-path Schedules, the transmission priority used to determine the tag’s curtailment priority will be the Qualified Transfer Path segment of transmission on the e-Tag. For off-path Schedules, the lowest transmission priority of any segment on the tag will be used to determine the curtailment priority of the e-Tag. The minimum acceptable TDF level is +10 percent; transactions with a lesser TDF will be excluded from the relief requirement calculation.

When an event is called that requires curtailments, the Qualified Transfer Path Operator will issue a request for a megawatt level of relief. This requested relief will be used to determine the Schedules that must be curtailed by taking each individual tag’s impact on the path (as determined by the TDFs), starting with the first group and proceeding through the groups until the level of relief is obtained. This will identify the groups that are assigned a relief requirement.

All Schedules in a lower priority grouping will be curtailed to a zero megawatt energy profile for the event. The Schedules in the highest priority group that has a relief requirement will have a relief requirement assigned based upon a “TDF Squared” process that will assign the relief requirement that requires the higher TDF Schedules to be assigned a proportionally greater relief requirement, resulting in a lower total curtailment for all Schedules in that Group. However, all Schedules with a relief requirement in that group will be curtailed to some extent.

The following is a list of the groups in the order of relief requirement (first relief requirement to last relief requirement):

- Group 1 – Priority 0 (Transmission Product - code 0-NX) off-path
- Group 2 – Priority 0 on-path
- Group 3 – Priority 1 (Transmission Product - code 1-NS) off-path
- Group 4 – Priority 1 on-path
- Group 5 – Priority 2 (Transmission Product - code 2-NH) off-path
- Group 6 – Priority 2 on-path
Group 7 – Priority 3 (Transmission Product - code 3-ND) off-path
Group 8 – Priority 3 on-path
Group 9 – Priority 4 (Transmission Product - code 4-NW) off-path
Group 10 – Priority 4 on-path
Group 11 – Priority 5 (Transmission Product - code 5-NM) off-path
Group 12 – Priority 5 on-path
Group 13 – Priority 6 (Transmission Product - codes 6-NN and 6-CF) off-path
Group 14 – Priority 6 on-path
Group 15 – Priority 7 (Transmission Product - codes 7-F and 7-FN) off-path
Group 16 – Priority 7 on-path
<table>
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<tr>
<th>Path Code</th>
<th>Path Opr</th>
<th>Qualified Transfer Path</th>
<th>Qualifying Direction *</th>
<th>Path Transfer Capability-MW **</th>
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<tr>
<td>66</td>
<td>CISO</td>
<td>California-Oregon Intertie Malin-Round Mt. 500-kV lines 1&amp;2 Captain Jack-Olinda 500-kV line</td>
<td>CCW (north-south)</td>
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<td>APS</td>
<td>Four Corners-Central Arizona Four Corners-Moenkopi 500-kV line Four Corners-Cholla 345-kV lines 1&amp;2</td>
<td>CW (east-west)</td>
<td>2325</td>
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<tr>
<td>23</td>
<td>APS</td>
<td>Four Corners 345/500-kV Transformer with Four Corners Unit 5 out of service or at greatly reduced output</td>
<td>CW (low-high)</td>
<td>840</td>
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<td>30</td>
<td>WACM</td>
<td>TOT 1A transmission path Hayden-Artesia 138-kV Meeker-Rangely 138-kV Bears Ears-Bonanza 345-kV</td>
<td>CW (east-west)</td>
<td>650</td>
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<td>31</td>
<td>WACM</td>
<td>TOT 2A transmission path Hesperus-Glade Tap 115-kV line Lost Canyon-Shiprock 230-kV line Waterflow-San Juan 345-kV line</td>
<td>CW (north-south)</td>
<td>690</td>
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<td>36</td>
<td>WACM</td>
<td>TOT 3 transmission path Laramie River-Ault 345-kV line Laramie River-Story 345-kV line Archer-Ault 230-kV line Sidney- Spring Canyon 230-kV line Sidney-Sterling 115-kV line Cheyenne-Owl Creek 115-kV line Cheyenne-Ault 230-kV line</td>
<td>CW (north-south)</td>
<td>1680</td>
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* Direction in which the Path is qualified to request USF relief:  
  
  CCW = Counterclockwise direction  
  CW = Clockwise direction

** These values are nominal. The actual value may change with system conditions. Accommodation levels are based on the path transfer capability available at the time.
### WECC Unscheduled Flow Reduction Guideline

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<th>Procedure No.</th>
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**Distribution Restriction:** None

**Approved By:**

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References

Resources studied in the development of this procedure and that may have an effect upon some steps taken herein include but are not limited to:

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Version History

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Technical Review

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<td>3/03/15</td>
</tr>
</tbody>
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