

ARTICLE FIVE A

Transmission Congestion Rights (TCRs)

5A.1 Overview.

5A.1.1 Transmission Congestion Rights create potential exposure of non-payment, and therefore, have a credit requirement. SPP will establish a Total TCR Credit Requirement for each Credit Customer holding TCRs or participating in a TCR Auction. A Credit Customer may satisfy its Total TCR Credit Requirement by providing Financial Security. Unsecured Credit is not available to support a Credit Customer's holding of TCRs or activity in TCR Auctions. Additionally, SPP's prior approval is required for a Credit Customer to acquire or transfer TCRs through bilateral transactions.

5A.1.2 To establish the credit requirement associated with TCRs, SPP analyzes: (i) the TCRs the Credit Customer holds (including TCRs held via self-conversion from ARR); (ii) the Credit Customer's Bids and Offers for TCRs in the TCR Auctions; (iii) TCR payments or charges for which settlement has been calculated but not yet invoiced; and (iv) TCR payments or charges for which an invoice has been issued but payment has not occurred.

- (a) SPP calculates the potential exposure associated with the full portfolio of TCRs that are held by the Credit Customer including TCRs obtained from LTCRs and ILTCRs.
- (b) SPP evaluates individually each TCR Bid in the TCR Auctions to ensure that the Credit Customer has sufficient Financial Security to cover the credit requirements to purchase and hold the TCR. Only the TCR Bids for which the Credit Customer has sufficient Financial Security will be credit approved for consideration in the TCR Auction.
- (c) SPP evaluates individually each TCR Offer in the TCR Auctions to ensure that the Credit Customer has sufficient Financial Security to cover any credit requirements associated with the Offer and the credit requirements for the retained TCR portfolio that would result if the TCR Offer clears in the TCR Auction. Only the TCR Offers for which the Credit Customer has sufficient Financial Security will be credit approved for consideration in the TCR Auction.
- (d) Additionally, SPP analyzes the credit requirements associated with TCRs that are the subject of a proposed bilateral transfer prior to providing approval of such transfers. SPP approval of a bilateral

transfer for TCRs is required for such bilateral transfers to be completed.

5A.1.3 As part of the determination of the credit requirement associated with TCRs, SPP calculates the Estimated TCR Exposure (ETCRE), which is an estimate of the potential value of the TCR over the life of the TCR. In the case of a TCR associated with a LTCR or ILTCR, the life of the TCR shall be considered one year. It will be calculated for all TCRs the Credit Customer holds, the Credit Customer's TCR Bids and TCR Offers, proposed TCR bilateral transfers, and TCRs acquired through ARR self-conversion. SPP will determine the credit requirement associated with TCRs and whether the Credit Customer has available Financial Security to support its TCR activity. After the close of a TCR Auction and on an ongoing basis, SPP will update the Credit Customer's Total TCR Credit Requirement associated with TCRs to reflect the actual TCRs the Credit Customer holds and TCR Auction results, including the costs to acquire or sell TCRs in a TCR Auction.

5A.1.4 This Article addresses the calculation of the Total TCR Credit Requirement associated with TCRs, including the ETCRE calculations for the TCRs the Credit Customer holds and the Credit Customer's Bids and Offers for TCRs in the TCR Auctions and the acquisition and disposal costs of the TCR in the TCR Auctions; as well as the TCR payments or charges for which settlement has been calculated but not yet invoiced; and the TCR payments or charges for which an invoice has been issued but payment has not occurred. This Article also addresses the determination whether a Credit Customer has sufficient Financial Security available for the Credit Customer's proposed TCR Auction activity or proposed bilateral transfers of TCRs.

5A.2 Calculation of Estimated TCR Exposure (ETCRE) for TCRs that a Credit Customer Holds (ETCRE Hold). SPP will calculate the ETCRE Hold, which is an estimate of the potential value (positive or negative) of the TCR contract for the term of the TCR, for TCRs that a Credit Customer holds. A negative ETCRE Hold means SPP estimates that the potential value of the TCR will result in a payment by the Credit Customer. A positive ETCRE Hold means SPP estimates that the potential value of the TCR will result in a payment to the Credit Customer. The ETCRE Hold calculation is determined for each TCR on an individual basis. ETCRE Hold is the product of the TCR Final Reference Price times the TCR megawatts. SPP will calculate the TCR Final Reference Price for each TCR based on the difference of historical Day-Ahead Market Marginal Congestion Cost (MCC) between the TCR source and TCR sink.

5A.2.1 TCR Final Reference Price. For a given source and sink combination and with respect to time (season or month) and class (on-peak and off-peak), the TCR Final Reference Price has two components: (i) a TCR Mean Price; and (ii) a TCR

Stress Test Price. The Final Reference Price is the TCR Mean Price *minus* the TCR Stress Test Price.

5A.2.1.1 Both the TCR Mean Price and TCR Stress Test Price are determined using the Day-Ahead Market Marginal Congestion Component (MCC) prices from the prior two years. Each year of the prior two year period will be weighted, with the more recent year receiving a 75% weighting and the more distant year receiving a 25% weighting. The MCC prices used in the calculations for a TCR match the definition of the TCR with respect to time (season or month) and class (on-peak and off-peak). Historical MCC prices to be used for the more recent year will only be used if the specific time period (season or month) has been completed, i.e. no partial period MCC prices will be used to calculate Final Reference Prices.

5A.2.1.1.1 A TCR Final Reference Price determination is used in the calculations for ETCRE Hold, ETCRE Bid, and ETCRE Offer calculations. For each such calculation, the prior two year period used in the calculation is measured from the time of the calculation. ETCRE Hold calculations will be updated to reflect updated prior two year periods for a given TCR as MCC prices are completed for a season or month that previously was not included in the prior two year period.

5A.2.1.2 The TCR Mean Price is the sum of 75% of the mean of the hourly Day-Ahead Market MCC difference calculated as the sink MCC minus the source MCC for the more recent year in the prior two year period plus 25% of the mean of the hourly Day-Ahead Market MCC difference calculated as the sink MCC minus the source MCC for the more distant year in the prior two year period.

5A.2.1.3 The TCR Stress Test Price calculation differs for TCRs with positive and negative Mean Prices. For a TCR with a negative TCR Mean Price, the TCR Stress Test Price is the 90th percentile of the opposite flow value (i.e. source MCC minus sink MCC) in the prior two year period. For a TCR with a positive TCR Mean Price, the TCR Stress Test Price is the 75th percentile of the opposite flow value (i.e. source MCC minus sink MCC) in the prior two year period. The TCR Stress Test Price has a minimum value of zero and thus can never increase the TCR Final Reference Price.

5A.2.2 Calculation of TCR Final Reference Price during the Initial Two-Years of the Integrated Marketplace. Prior to the accumulation of complete MCC data sufficient to calculate the TCR Final Reference Price pursuant to Section 5A.2.1, to calculate both the Mean Price and Stress Test Price, to the extent complete MCC price data for the applicable prior two year period is not available, SPP will use the applicable historical energy imbalance service price differences.

5A.2.3 Calculation of TCR Final Reference Price for New Settlement Locations. When a new Settlement Location is created, SPP will use a proxy price based on the system average Day-Ahead Market MCC to calculate the TCR Mean Price and TCR Stress Test Price for the new Settlement Location. The system average Day-Ahead Market MCC for each defined TCR is the mean of the hourly Day-Ahead Market MCC for all Settlement Locations for which a Day-Ahead Market MCC exists for each hour in the prior two year period for a defined TCR. Based on a two year weighted average approach, the proxy will be blended with actual data after the first year.

5A.3 TCR Portfolio Credit Requirement. The Financial Security required for a Credit Customer's TCR portfolio is the TCR Portfolio Credit Requirement and is one component of the Total TCR Credit Requirement. The TCR Portfolio Credit Requirement is the sum of (i) the sum of the ETCRE Hold values for each TCR in the Credit Customer's TCR portfolio; (ii) the portion of the cost to acquire each TCR in a TCR Auction that has not yet been settled; and (iii) the disposal cost for TCR Offers that clear a TCR Auction that has not yet been settled.

5A.3.1 The sum of the ETCRE Hold values for each TCR in the Credit Customer's TCR portfolio used in the calculation of the TCR Portfolio Credit Requirement is equal to the net sum of the ETCRE Hold values for each TCR in the Credit Customer's TCR portfolio, with individual positive and negative ETCRE Hold values netted, for a time period greater than the last settled operating day with the most negative net sum of ETCRE Hold values of the Credit Customer's TCR portfolio. For a TCR with a term longer than a month, the ETCRE Hold for each month of the TCR is equal to the total ETCRE Hold for the TCR divided by the number of months of the term of the TCR. SPP calculates the ETCRE Hold each day for which at least one TCR in the portfolio is valid.

5A.3.2 The portion of the acquisition cost to acquire each TCR in a TCR Auction that has not yet been settled includes the amounts that the Credit Customer is required to pay for TCRs it acquires in a TCR Auction, that have not yet been settled, and does not include amounts that may be owed to a Credit Customer to acquire a TCR. For TCRs acquired through self-converted ARRs, the acquisition cost is zero. For TCRs acquired through a bilateral transfer the acquisition cost is zero for the buyer because the acquisition cost remains the responsibility of the participant who originally acquired the TCR in a TCR Auction.

5A.3.3 The portion of the disposal cost for each TCR Offer that clears a TCR Auction that has not yet been settled is the portion of a Credit Customer's loss associated with the difference between the Offer price and the original Auction Clearing Price for the TCR that is the subject of the TCR Offer. For TCRs acquired pursuant to a bilateral transfer that are the subject of a TCR Offer, zero will be used for the Auction Clearing Price for this calculation.

5A.3.4 If the TCR Portfolio Credit Requirement is a positive value it can reduce the Financial Security requirement for TCR Bids, Offers, and ARR self-converts in a single submission for the same TCR period in the calculation of the Total TCR Credit Requirement. If the TCR Portfolio Credit Requirement is a negative value it will not reduce the Financial Security requirement for TCR Bids, Offers, and ARR self-converts in a single submission in the calculation of the Total TCR Credit Requirement.

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5A.4 Calculation of ETCRE Bid. SPP evaluates the Bids for TCRs to ensure that the Credit Customer has sufficient Financial Security to cover any Financial Security requirements to purchase and hold the TCR. The ETCRE Bid calculates the Financial Security requirements for each Bid. When a TCR Bid is submitted, SPP will calculate the ETCRE Bid for the Bid, which is the maximum sum of (i) the ETCRE Segment and (ii) the TCR Segment Cost, for the segments in the Bid. SPP calculates the ETCRE Segment for each megawatt point on the submitted Bid curve, and the TCR Segment Cost for each megawatt point on the submitted Bid curve. For each segment, SPP calculates the sum of (i) the ETCRE Segment and (ii) the TCR Segment Cost.

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5A.4.1 ETCRE Segment. In evaluating TCR Bids, SPP calculates the ETCRE Segment for each megawatt point on the submitted Bid curve. The ETCRE Segment can be positive or negative. It is the potential value of holding the TCR in the Bid. It is calculated in the same manner as the ETCRE Hold, using the Final Reference Price, and the TCR Bid megawatts.

5A.4.2 TCR Segment Cost. In evaluating TCR Bids, SPP estimates the TCR acquisition cost by calculating the TCR Segment Cost for each megawatt point on the submitted Bid curve by multiplying the Bid price for that megawatt point times the megawatts for that point on the submitted Bid curve. The TCR Segment Cost is the potential cost for the Credit Customer to acquire any megawatt point on the submitted Bid segment. For TCRs with negative acquisition costs, e.g., if the Bid curve has a negative Bid price, the TCR Segment Cost will be zero. For a TCR resulting from an ARR self-conversion, the TCR Segment Cost also will be zero.

5A.4.3 Both positive and negative TCR values for ARRs submitted for self-conversion to TCRs in a TCR Auction will be included in the Credit Customer's Total TCR Credit Requirement. Ninety percent (90%) of the positive and one hundred percent (100%) of the negative TCR values for ARRs self-converted will be netted and the netted value used in establishing the credit requirement.

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5A.4.4 If multiple TCR Bids and Offers are included in a single submission, the Credit Customer must have sufficient Financial Security to cover all of the Bids and Offers in the submission. The Financial Security requirement for a single submission is the sum of the negative ETCRE Bid and ETCRE Offer for the Bids and Offers in the submission without any netting of the individual ETCRE Bid or ETCRE Offer for the TCR Bids and Offers that are included in the submission.

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5A.5 Calculation of ETCRE Offer. SPP evaluates the Offers for TCRs to ensure that the Credit Customer has sufficient Financial Security to cover any Financial Security requirements resulting if the TCR is no longer held and potential losses resulting from the sale. The ETCRE Offer calculates the Financial Security requirement for each Offer. When a TCR Offer is submitted, SPP will calculate the ETCRE Offer for the Offer which is the maximum sum of (i) the ETCRE Offer Segment; and (ii) the TCR Offer Segment Cost, for the segments in the Offer. SPP calculates the ETCRE Offer Segment for each megawatt point on the submitted Offer curve. For each segment, SPP calculates the sum of (i) the ETCRE Offer Segment, and (ii) the TCR Offer Segment Cost.

5A.5.1 ETCRE Offer Segment. In evaluating TCR Offers, SPP calculates the ETCRE Offer Segment for each megawatt point on the submitted Offer curve. It is the potential value of disposing of an existing TCR in the Offer. It is calculated in the same manner as the ETCRE Hold, using the Final Reference Price and the TCR Offer megawatts. If the calculated ETCRE Offer Segment is positive, SPP sets the ETCRE Offer to zero.

5A.5.2 TCR Offer Segment Cost. In evaluating TCR Offers, SPP estimates the TCR disposal cost by calculating the TCR Offer Segment Cost for each megawatt point on the submitted Offer curve by multiplying the Offer price for that megawatt point times the megawatts for that point on the submitted Offer curve. The TCR Offer Segment Cost is the potential cost for the Credit Customer to dispose of any megawatt point on the submitted Offer segment. If the TCR was originally acquired from an ARR self-schedule or pursuant to a bilateral transfer, zero is used for the original Auction Clearing Price. If the calculated ETCRE Offer Segment Cost is *positive* SPP sets the ETCRE Offer to zero.

5A.5.3 If multiple TCR Bids and Offers are included in a single submission, the Credit Customer must have sufficient Financial Security to cover all of the Bids and Offers in the submission. The Financial Security requirement for a single submission is the sum of the negative ETCRE Bid and ETCRE Offer for the Bids and Offers in the submission without any netting of the individual ETCRE Bid or ETCRE Offer for the TCR Bids and Offers that are included in the submission.

5A.6 Determination of Credit Approved TCR Bids and Offers and Rejection of TCR Bids and Offers which are Credit Disapproved.

5A.6.1 If the sum of the ETCRE Bid and ETCRE Offer for all TCRs included in a single submission of Bids and Offers for a TCR Auction, calculated pursuant to sections 5A.4 and 5A.5, netted with the TCR Portfolio Credit Requirement as described in section 5A.3.4, is less than the Credit Customer's available amount of Financial Security, then the submission is credit approved for inclusion in the TCR Auction.

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5A.6.2 If the sum of the ETCRE Bid and ETCRE Offer for all TCRs (other than TCRs self-converted from ARR's) included in a single submission of Bids and Offers for a TCR Auction, calculated pursuant to sections 5A.4 and 5A.5, netted with the TCR Portfolio Credit Requirement as described in section 5A.3.4, is greater than the Credit Customer's available Financial Security, then the entire submission is credit disapproved and the Bids and Offers will not be included in the TCR Auction.

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5A.6.3 If the sum of the ETCRE Bid and ETCRE Offer for all TCRs included in a single submission of ARR self-conversions for a TCR Auction, calculated pursuant to sections 5A.4 and 5A.5, with netting as described in Section 5A.4.3 of this Attachment X, is less than the Credit Customer's available amount of Financial Security, then the submission is credit approved for inclusion in the TCR Auction.

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5A.6.4 If the sum of the ETCRE Bid and ETCRE Offer for all TCRs included in a single submission of ARR self-conversions for a TCR Auction, calculated pursuant to sections 5A.4 and 5A.5, with netting as described in Section 5A.3.5 of this Attachment X, is greater than the Credit Customer's available Financial Security, then the entire submission is credit deficient and the ARR self-conversion will not be included in the TCR Auction unless satisfactory alternate credit arrangements are made.

5A.7 Updated ETCRE Calculation Post TCR Auction. After the clearing of a TCR Auction, the TCR Portfolio Credit Requirement will be updated to reflect the TCRs awarded in the TCR Auction, including the acquisition cost for TCR Bids that cleared the TCR Auction and the disposal cost for TCR Offers that cleared the TCR Auction. For TCR Bids, the TCR acquisition cost is calculated as the product of the Auction Clearing Price times the awarded megawatts. For TCR Offers, the TCR disposal cost is calculated as the product of the Auction Clearing Price times the megawatts sold. The ETCRE Hold portion of the TCR Portfolio Credit Requirement will be updated to reflect the actual TCRs in the portfolio.

5A.8 Total TCR Credit Requirement. The total Financial Security requirement associated with the Credit Customer's holding of TCRs and participating in the TCR Auctions is the Total TCR Credit Requirement. The Total TCR Credit Requirement for a Credit Customer is the sum of (i) the TCR Portfolio Credit Requirement for the Credit Customer's TCR portfolio, reflecting all of the TCRs held by the Credit Customer, calculated pursuant to section 5A.3; (ii) the Financial Security required for the Credit Customer's participation in a TCR Auction, determined by the credit approved ETCRE Bid, calculated pursuant to section 5A.4, and ETCRE Offer, calculated pursuant to

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section 5A.5, for a TCR Auction that has not yet occurred; (iii) all TCR charges or credits that have been invoiced but not yet paid; and (iv) TCR charges or credits that have been calculated but not yet invoiced.

Total TCR Credit Requirement =
TCR Portfolio Credit Requirement + ETCRE Bid + ETCRE Offer + (ITCRC + CTCRC)

Where,

TCR Portfolio Credit Requirement is calculated pursuant to section 5A.3.

ETCRE Bid is the sum of the ETCRE Bid amounts for the Credit Customer's credit approved Bids for an auction that has not yet occurred, as calculated pursuant to section 5A.4, without netting ETCRE Bid or ETCRE Offers in a submission.

ETCRE Offer is the sum of the ETCRE Offer amounts for the Credit Customer's credit approved Offers for an auction that has not yet occurred, as calculated pursuant to section 5A.5, without netting ETCRE Bid or ETCRE Offers in a submission.

ITCRC is the Invoiced TCR Charges (all TCR charges or credits that have been invoiced but not yet paid). If the sum of ITCRC and CTCRC for a Credit Customer is negative, then zero will be included for the sum of ITCRC and CTCRC in the calculation of the Total TCR Credit Requirement.

CTCRC is the Calculated TCR Charges (TCR charges or credits that have been calculated but not yet invoiced). If the sum of ITCRC and CTCRC for a Credit Customer is negative, then zero will be included for the sum of ITCRC and CTCRC in the calculation of the Total TCR Credit Requirement.

5A.8.1 If a Credit Customer's available Financial Security is less than its Total TCR Credit Requirement, then the Credit Customer shall be required to provide additional Financial Security within two (2) Business Days from receipt of notice of such violation. Failure to provide such Financial Security is a Default under this Credit Policy.

5A.9 Transfer of TCRs. If a Credit Customer proposes to sell or acquire TCRs through a bilateral transfer with another Credit Customer, SPP will evaluate the effect of the proposed transfer on the Total TCR Credit Requirement of each party to the proposed bilateral transfer and determine if both the buyer and the seller have sufficient Financial Security for the bilateral transfer to occur. SPP approval of such bilateral transfers, based on whether both the buyer and seller have provided sufficient Financial Security to support the transfer, is required prior to such transfers.

5A.9.1 For the seller in a bilateral transfer, SPP calculates the impact of the proposed transfer on the TCR Portfolio Credit Requirement that would result from the

removal of the TCRs that are the subject of the proposed bilateral transfer from the TCR portfolio of the Credit Customer that is the seller in the bilateral transfer.

5A.9.2 For the buyer in a bilateral transfer, SPP calculates the impact of the proposed transfer on the TCR Portfolio Credit Requirement that would result from the addition of the TCRs that are the subject of the proposed bilateral transfer from the TCR portfolio of the Credit Customer that is the buyer in the bilateral transfer.

5A.9.3 If multiple TCRs are included in a single proposed bilateral transfer, both parties to the bilateral transfer must have sufficient Financial Security for the transfer of all of the TCRs in the proposed transfer.

5A.9.4 SPP, in its sole discretion, may approve bilateral transfers if a Credit Customer does not have sufficient Financial Security to support the transfer, but the transfer would result in a reduction in Total TCR Credit Requirement for that Credit Customer.

5A.9.5 The bilateral TCR transfer price is not included in SPP's evaluation of a bilateral transfer of TCRs. After an approved bilateral transfer of TCRs is completed, each Credit Customer's Total TCR Credit Requirement is updated.

5A.10 Return of TCR Financial Security. A Credit Customer may request that SPP return any Financial Security no longer required to hold TCRs or participate in TCR Auctions if it is not needed to support other market services. SPP may limit the frequency of such requested Financial Security returns, provided that Financial Security returns will be made by SPP at least once per month, if requested by a Credit Customer.