**NSP’s Responses to MMPA’s Questions from June 29, 2017**

*The NSP Companies’ Annual True-up, Information Exchange and Challenge Procedures (Protocols) provide interested parties the opportunity to request information related to the calculation of the actual net revenue requirement, true-up adjustment and projected net revenue requirement. Section III(A) sets forth limitations on the scope of information requests. To the extent that the questions below are unrelated to the 2016 rate year or do not impact these calculations, the questions have been identified as being outside of the Review Period or scope in accordance with Section III of the Protocols.*

1. Are the loads in the Attachment O divisor adjusted for losses?

Yes. All loads in the Attachment O-NSP divisor are reported at the transmission input level, and therefore all loads metered at any other point are adjusted for transmission or other applicable losses. The transmission loss rate applied to the loads is based on where the loads sink. The NSP Attachment O includes loads that sink in three separate LBAs: the NSP LBA, the OTP LBA and the GRE LBA.[[1]](#footnote-1)

NSP calculates transmission losses for loads that sink in the NSP LBA[[2]](#footnote-2) as prescribed in the MISO Tariff and MISO Business Practice Manual (“BPM”) No. 012, Section 3.1.8.1. The loss calculation methodology was approved by FERC in Docket No. ER15-197 on 12/31/14.

MISO calculates the observed transmission losses on the system as part of its market dispatch process. MISO supplies NSP with observed transmission losses from the previous year. In turn, NSP sums the observed loss amount for each month’s peak hour for the previous twelve months. To determine the loss percentage, this result is then divided by the total peak load, inclusive of losses, summed for the same 12 months.

1. What loss percentage is used to adjust the NSP Attachment O divisor?

For loads sinking in the NSP LBA, the loss percentage used for 2016 rates was 3.5035% % and for 2017 rates it is 2.9629%. The derivation of these transmission loss amounts is provided in Attachment 1 to this document.

1. Do the losses calculated by the State Estimator include losses across the transmission‐to‐distribution transformer?

No.

1. Does the divisor in NSP’s Attachment O include losses on the transformation of energy from transmission to distribution voltage?

No.

1. When was a change made from the use of losses taken from an NSP System Loss Study to the use of State Estimator losses?

This change was enacted before the 2016 or 2017 rate years.

1. How were losses calculated before NSP switched to using State Estimator losses?

Transmission losses have been calculated by MISO since before the 2016 and 2017 rate years.

1. Does NSP still do a NSP LBA loss study? If yes, could we have a copy of each loss study for 2013, 2014, 2015, and 2016?

NSP did not perform an NSP LBA loss study to support the 2016 and 2017 loss rates described in the response to question 2.

1. Do you do a separate loss study for NSP LBA load? Do you do a separate loss study for NSP LBA through‐and‐out transactions?

NSP did not do a separate loss study for the NSP LBA to support the 2016 or 2017 loss rates described in the response to question 2, nor does it perform a separate loss study for NSP LBA through-and-out transactions since MISO is the Balancing Authority, the transmission service provider and the operator of the regional market. The concept and identification of “through and out” transaction is inapplicable to the NSP LBA.

1. Are through‐and‐out transactions charged the NSP LBA loss percentage? If not, how are losses collected from through‐and‐out transactions?

Transactions through and out of the MISO BA are required under Schedule 7 and Schedule 8 of the MISO tariff to reserve sufficient transmission capacity to cover related energy schedules, including applicable losses. As the Transmission Provider, MISO would identify the applicable loss rate(s) applicable to through-and-out transactions.

1. Does the NSP Attachment O contain revenue recovery for NSP facilities in the Otter Tail LBA?

Yes. NSP owns facilities in Otter Tail’s LBA, the costs of which are recovered in NSP’s Attachment O because the facilities were constructed to serve loads on the NSP System. NSP loads on the Otter Tail system are also included in the Attachment O divisor.

1. Please explain how the State Estimator calculates the NSP LBA loss factor. Please include the formula or formulas used by the State Estimator to determine NSP LBA transmission losses.

MISO calculates all State Estimator losses pursuant to its Tariff. The MISO State Estimator losses are separate from the loss calculation for Attachment O-NSP. NSP suggests a meeting be held with MISO to discuss technical aspects of MISO’s calculation of state estimator losses.

1. Are all of the facilities listed in the Agency Agreement (Appendix H and G) to the MISO Transmission Owners Agreement included in NSP’s Attachment O?

Yes.

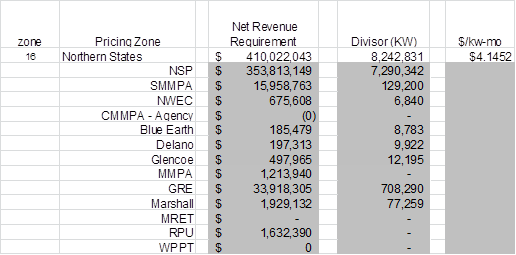
1. Why did the network load column in the divisor tab of NSP’s Attachment O filing effective January 1, 2017 increase 22% from the prior year?

The Divisor in the 2017 NSP Attachment O effective January 1, 2017 was reported as 8,305,583 MW, which is approximately 14.5% increase from the Divisor in the 2016 NSP Attachment O of 7,253,000 MW. This change results from a change in reporting to MISO, but did not result in a change in the combined zonal divisor used by MISO to calculate the rate for MISO Zone 16.  Therefore, there was no rate impact as a result of this change in reporting.

For billing purposes, the loads reported on the Divisor tab of NSP’s Attachment O filing are combined with loads reported by other transmission owners in MISO Zone 16 in the development of the zonal rate, which is comprised of the sum of the Annual Transmission Revenue Requirement (ATRR) for all transmission owners with an ATRR recovered from Zone 16 divided by the sum of all loads residing in Zone 16.

Table 1 below shows the composition of the network service rate for MISO Zone 16 as of July 2017:

Table 1



As can be seen in Table 1, the amount shown in the divisor line for NSP is less than the 8,305,583 MW reported in NSP’s Attachment O.  This is because MISO makes two types of adjustments when preparing the Zone 16 combined zonal divisor: (1) NSP’s load in the GRE joint pricing zone, which is included in the NSP Attachment O divisor, is subtracted and assigned to the GRE pricing zone, and (2) loads on the NSP system that are reported to MISO by more than one transmission owner are subtracted from NSP’s reported amount to avoid duplication.  See table below for a reconciliation between NSP’s Attachment O divisor and the divisor shown in MISO’s rate calculation.

|  |  |  |  |
| --- | --- | --- | --- |
| **NSP Attachment O Divisor** |  | **8,305,583** |  |
|  |  |  |  |
| Less: |  |  |  |
| NSP load in GRE pricing zone included in Att O divisor | 64,417 |  |  |
| SMMPA | 129,200 |  |  |
| NWEC | 6,840 |  |  |
| Blue Earth | 8,783 |  |  |
| Delano | 9,922 |  |  |
| Glencoe | 12,195 |  |  |
| GRE | 708,290 |  |  |
| Marshall | 77,259 |  |  |
| Total |  | 1,016,906 |  |
| Adjustment |  | 1,665 | **A** |
| **NSP divisor shown in MISO rate calculation** |  | **7,290,342** |  |
|  |  |  |  |
| **A** - Represents difference between loads reported by NSP and loads reported by other individual transmission owners | | | |

Prior to 2017, the GRE, SMMPA and MRES loads, which are served by the NSP system, were reported to MISO only by those other transmission owners.  NSP and MISO determined that, since the loads are served by NSP’s system, and therefore should be represented in true-up calculations for NSP’s transmission formula rate, it was more appropriate to include all Zone 16 loads in the NSP Attachment O divisor in order to properly represent NSP’s total system load. Since the same load is reported to MISO by more than one transmission owner, it is adjusted in MISO’s calculation of the rate.

As shown on the MISO tab of Attachment O the total divisor for Zone 16 for 2016 (as of Jan-2016 Attachment O Rate file) was 8,155,028, whereas  the current 2017 Attachment O Rates file shows 8,242,831 which equates to approximately 1% increase year of year.

1. Why does the divisor tab of NSP’s Attachment O filing effective January 1, 2017 includes columns for GRE, SMMPA, and MRES (columns E, F, and G of the divisor tab)? These columns were not present in NSP’s Attachment O filing effective January 1, 2016.

Refer to the response of Question 13. As stated this change does not impact the combined zonal divisor or rate calculation prepared by MISO; it simply reflects the total loads reported in the NSP Attachment O.

1. **a)** What were the losses for load in the NSP zone in 2012?

Outside of the Review Period (period of time from the Publication Date - date on which the Annual True-up occurs - until January 31) for the scope of the 2016 true-up calculation according to Section III of the NSP Annual Rate Calculation and True-Up Procedures[[3]](#footnote-3)

**b)** What were the losses for load in the NSP zone in 2013?

Outside of the Review Period for the 2016 true-up calculation.

**c)** What were the losses for load in the NSP zone in 2014?

Outside of the Review Period for the 2016 true-up calculation*.*

**d)** What were the losses for load in the NSP zone in 2015?

Outside of the Review Period for the 2016 true-up calculation.

**e)** What were the losses for load in the NSP zone in 2016?

The losses used in the rate calculation are not based on a calendar year. As shown in the attachment, the 12 month sum of the peak hour losses is 3005.3 MW and 2607 MW for the 2016 and 2017 rate year, respectively.

1. **a)** What were the losses for energy moving through and out of the NSP zone in 2012?

Outside of the Review Period for the 2016 true-up calculation.

**b)** What were the losses for energy moving through and out of the NSP zone in 2013?

Outside of the Review Period for the 2016 true-up calculation.

**c)** What were the losses for energy moving through and out of the NSP zone in 2014?

Outside of the Review Period for the 2016 true-up calculation.

**d)** What were the losses for energy moving through and out of the NSP zone in 2015?

Outside of the Review Period for the 2016 true-up calculation.

**e)** What were the losses for energy moving through and out of the NSP zone in 2016?

The losses for energy flowing over the NSP LBA are not separately identified.

1. Does the rate base in NSP’s Attachment O contain costs related to transformers in substations that transform power from transmission voltage to distribution voltage?

No, transformers in a substation that transform Transmission voltage to Distribution voltage are a Distribution asset.

1. Does the rate base in NSP’s Attachment O contain costs related to switchgear in substations that transform power from transmission voltage to distribution voltage?

No, switchgear in a substation is a Distribution asset (they do not transform voltage).

1. Does the rate base in NSP’s Attachment O contain costs related to assets other than transformers or switchgear in substations that transform power from transmission voltage to distribution voltage?

No.

1. Does the rate base in NSP’s Attachment O contain costs related to generation step up transformers?

No. Generation step-up transformers are classified as transmission serving generation and the costs are excluded from Attachment O-NSP through the Transmission Plant allocator calculation on page 4 of the Rate Formula Template.

1. How much customer‐owned generation was on NSP’s system for each of the last five years, as measured in kilowatts?

MISO and NSP require customers to gross up their reported load associated with behind the meter generation. However, neither NSP nor MISO are at liberty to provide customer specific information of NSP’s transmission customers. This information is not relevant to the calculation of the 2016 or 2017 transmission rates.

1. How much customer‐owned generation was in the divisor of NSP’s Attachment O for each of the last five years, as measured in kilowatts?

Customer owned generation that is in front of the meter and is registered with MISO does not impact the calculation of transmission rates. To the extent a customer has behind the meter generation, that customer is required to gross up their network load reported to NSP and MISO. The divisor of NSP’s Attachment O is the resulting grossed up load number and so there is no generation in the divisor.

1. How does NSP measure customer‐owned generation in developing the divisor for Attachment O?

To the extent a customer has behind the meter generation, that customer is required to gross up their network load reported to NSP and MISO. The divisor of NSP’s Attachment O is the resulting gross load, exclusive of generation, so there is no generation in the divisor.

1. How much generation owned or under contract by NSP that is interconnected at distribution voltage was included in the divisor of NSP’s Attachment O for each of the last five years, as measured in kilowatts?

Below is the BTMG at the time of the monthly peak as reported in 2016 (Column E pg. 400 of the FERC Form 1 report).

|  |  |  |
| --- | --- | --- |
| **Date** | **Hour-ending** | **BTMG in MW** |
| 1/18/2016 | 18 | 27 |
| 2/8/2016 | 19 | 31 |
| 3/1/2016 | 11 | 29 |
| 4/18/2016 | 14 | 28 |
| 5/24/2016 | 17 | 26 |
| 6/10/2016 | 14 | 29 |
| 7/20/2016 | 17 | 26 |
| 8/10/2016 | 16 | 23 |
| 9/6/2016 | 16 | 28 |
| 10/3/2016 | 14 | 26 |
| 11/30/2016 | 18 | 29 |
| 12/14/2016 | 18 | 20 |

1. How has NSP treated behind the meter generation in developing the divisor of its Attachment O for each of the last five years?

See response to question No. 22.

1. How has NSP treated demand response resources in developing the divisor of its Attachment O for each of the last five years?

The Attachment O divisor reflects actual loads during the peak hour. If demand response is deployed during the peak hour, the resulting peak load will be lower and so the divisor will also be smaller.

1. **a)** How much solar rooftop generation was included in the divisor of NSP’s Attachment O for each of the last

five years? What was the average kW size of each installation, as measured in kilowatts?

The NSP Attachment O divisor is not adjusted for solar roof top generation.

**b)** How much community solar garden generation was included in the divisor of NSP’s Attachment O for each of the last five years? What was the average kW size of each installation, as measured in kilowatts?

The question is outside of the scope of the Protocols since it is not “information that may reasonably have substantive effect on the calculation of the charge pursuant to the formula” since the amount of community solar garden generation and average kW size does not affect the calculation. NSP treats behind the meter community solar garden generation the same as other BTMG.

**c)** How much behind the meter hydropower generation was included in the divisor of NSP’s Attachment O for each of the last five years? What was the average kW size of each installation, as measured in kilowatts?

The question is outside of the scope of the Protocols since it is not “information that may reasonably have substantive effect on the calculation of the charge pursuant to the formula” since the amount of hydro generation and average kW size does not affect the calculation. NSP treats behind the meter hydro generation the same as other BTMG.

**d)** How much behind the meter wind generation was included in the divisor of NSP’s Attachment O for each

of the last five years? What was the average kW size of each installation, as measured in kilowatts?

The question is outside of the scope of the Protocols since it is not “information that may reasonably have substantive effect on the calculation of the charge pursuant to the formula” since the amount of wind generation and average kW size does not affect the calculation. NSP treats behind the meter wind generation the same as other BTMG.

**e)** How much behind the meter natural gas generation was included in the divisor of NSP’s Attachment O for each of the last five years, as measured in kilowatts? What was the average kW size of each installation?

The question is outside of the scope of the Protocols since it is not “information that may reasonably have substantive effect on the calculation of the charge pursuant to the formula” since the amount of natural generation and average kW size does not affect the calculation. NSP treats behind the meter gas generation the same as other BTMG.

**f)** How much behind the meter coal generation was included in the divisor of NSP’s Attachment O for each of the last five years? What was the average kW size of each installation?

The question is outside of the scope of the Protocols since it is not “information that may reasonably have substantive effect on the calculation of the charge pursuant to the formula” since the amount of coal and average kW size does not affect the calculation. NSP treats behind the meter coal generation the same as other BTMG.

1. Do any of the non‐NSP quantities (Columns B, D, E, F, and G) on the divisor tab of NSP’s Attachment O filing effective January 1, 2017, include recognition of any behind the meter generation and/or demand response resources. For each column, please indicate how much behind the meter generation and/or demand response resources are included.

Calculations of the 2017 divisor include estimated load based on historical load. To the extent historical load was grossed up for behind the meter generation, it would be reflected in the estimated load. To the extent the historical load was lower due to deployed demand response, it would be reflected in the estimated load.

1. NSP has requested that MMPA add back the amount of generation at its Shakopee Energy Park facility to the metered demand at the time of the monthly NSP zonal peak. Will this generation be included in the calculation of the divisor for NSP’s Attachment O going forward?

Yes*.*

1. Please provide a copy of all communications between NSP and MISO regarding NSP’s Attachment O submissions for the past four years.

NSP objects to this question as unduly burdensome and outside of the scope of the Protocols since it is not “information that may reasonably have substantive effect on the calculation of the charge pursuant to the formula.” Notwithstanding our objection, Attachment 2 shows NSP’s response to MISO’s questions regarding the 2017 estimated Annual Transmission Revenue Requirement.

**Attachment 1**

**Transmission Loss Update for 2015**



**Transmission Loss Update for 2016**



**Attachment 2**

**NSP’s response to MISO’s questions regarding the 2017 estimated ATRR**







1. Transmission Owner loss data (effective 1/1/2017) for OTP is 4.1142%, for GRE 1.1769%, and for NSP System 2.9629%. [↑](#footnote-ref-1)
2. The BPM states: “It will be the responsibility of the entity (the host Transmission Owner of a pricing zone, or system, where applicable) to update the Loss Percentage calculation method as described herein coincident with its next annual Attachment O update following January 1, 2015, and the updated Loss Percentage calculation will become effective coincident with the beginning of the next Attachment O rate year and will remain in effective 12 months.” [↑](#footnote-ref-2)
3. Interested Parties shall have until January 31following the Publication Date (unless such period is extended with the written consent of NSP Companies or by FERC order) to review the inputs, supporting explanations, allocations and calculations and to notify NSP Companies in writing, which may be made electronically, of any specific Informal Challenges to the Annual True-Up or projected net revenue requirement. [↑](#footnote-ref-3)