

SCHEDULE 5

Spinning Reserve

I. GENERAL

Spinning Reserve is required to immediately offset deficiencies in Energy supply that result from a Resource contingency or other abnormal event. Spinning Reserve may be provided by Resources that are Spin Qualified Resources available to provide Spinning Reserve. The obligation to maintain this immediate response capability to contingency events lies with the MISO Balancing Authority. The MISO Balancing Authority will procure Spinning Reserve on behalf of the Load Serving Entities, and Exporting Entities from cleared Resource Offers submitted by Market Participants selected in the Energy and Operating Reserve Markets as provided for in Sections 39.2 and 40.2 of this Tariff. Load Serving Entities, and Exporting Entities must either purchase this service from the MISO Balancing Authority or make alternative comparable arrangements to satisfy its Spinning Reserve Obligation, where such Obligation is defined below. The MISO Balancing Authority shall determine whether alternative arrangements proposed by Load Serving Entities, and Exporting Entities are comparable to the provision of this service by the MISO Balancing Authority.

II. DESCRIPTION OF SERVICE

Spinning Reserve is synchronized unloaded resource capacity set aside to be available to immediately offset abnormal supply deficiencies. Spinning Reserve must be immediately available and must be fully deployable within the Contingency Reserve Deployment Period. Spinning Reserve is a specified percentage of the Contingency Reserve requirements of the MISO Balancing Authority that must be provided by Spin Qualified Resources. Spinning Reserve is cleared and priced every Hour in the Day-Ahead Energy and Operating Reserve

Market and every Dispatch Interval in the Real-Time Energy and Operating Reserve Market.

Spinning Reserve is settled on an hourly basis in both the Day-Ahead and Real-Time Energy and Operating Reserve Markets.

III. PURCHASE OBLIGATIONS WITHIN THE MISO BALANCING AUTHORITY AREA AND RATES

Day-Ahead and Real-Time Spinning Reserve procurement costs are collected from Load Serving Entities and Exporting Entities on a zonal basis using the following rate methodology:

A. Binding Settlement Zone Spinning Reserve Charges

Market Participants, and Carved-Out GFA billing entities associated with Carved-Out GFAs, with Actual Energy Withdrawals and real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources, within a Binding Settlement Zone shall be charged each Hour, a pro-rata share of the total payments to Market Participants for Resources providing Spinning Reserve within that Binding Settlement Zone for that Hour as follows:

Costs allocated to Carved-Out GFAs:

$$\begin{aligned} \text{Carved-Out GFA Spinning Reserve Charge} = & \text{GFA Spinning Reserve Procurement Rate} \\ & \text{multiplied by the MP Carved-Out GFA} \\ & \text{Actual Energy Withdrawal minus the} \\ & \text{applicable Day-Ahead Ex Post MCP for} \\ & \text{Spinning Reserve or Hourly Real-Time Ex} \\ & \text{Post MCP for Spinning Reserve multiplied} \\ & \text{by the Minimum of [Spinning Reserve} \end{aligned}$$

schedules associated with the Carved-Out
GFA, and the MP Carved-Out GFA
Spinning Reserve Obligation] for the
Binding Settlement Zone,

Where:

GFA Spinning Reserve Procurement Rate = Spinning Reserve Procurement Cost / Total Actual
Energy Withdrawal in the Binding Settlement Zone;

Spinning Reserve Procurement Cost = The sum of all credits calculated under Section
39.3.2A.b plus the sum of all charges/credits
calculated under Section 40.3.3.3.b.iii specific to
Resources providing Spinning Reserve within the
Binding Settlement Zone;

MP Carved-Out GFA Actual Energy Withdrawal = Market Participant Actual Energy
Withdrawal, associated with Carved-Out GFA
Actual Energy Withdrawal and including real-time
Export Schedules, other than Export Schedules for
External Asynchronous Resources, within the
Binding Settlement Zone; and

Total Actual Energy Withdrawal = The sum of all Market Participant Actual Energy
Withdrawals, including Carved-Out GFA Actual
Energy Withdrawals and including real-time Export
Schedules, other than Coordinated Transaction

Schedules and Export Schedules for External
Asynchronous Resources, within the Binding
Settlement Zone; and

MP Carved-Out GFA Spinning Reserve Obligation = MP Carved-Out GFA Actual Energy
Withdrawal divided by Total Actual Energy
Withdrawal within the Binding Settlement Zone
multiplied by the sum of all Spinning Reserve
schedules within the Binding Settlement Zone.

Costs allocated to Non-GFA Withdrawals:

Spinning Reserve Charge non-GFA = Non-GFA Spinning Reserve Procurement
Rate * MP Actual Energy Withdrawal for
the Non-Binding Settlement Zone,

Where:

Non-GFA Spinning Reserve Procurement Rate = The difference between the Non-GFA Spinning
Reserve Procurement Cost and the aggregate sum of
all Carved-Out GFA Spinning Reserve Charges
divided by Total Actual Non-GFA Energy
Withdrawals within the Binding Settlement Zone;

Non-GFA Spinning Reserve Procurement Cost = The sum of all credits calculated under Section
39.3.2A.b plus the sum of all charges/credits
calculated under Section 40.3.3.3.b.iii specific to
Resources providing Spinning Reserve minus the

MP Actual Energy Withdrawal = aggregate sum of the applicable Day-Ahead Ex Post MCP for Spinning Reserve or Hourly Real-Time Ex Post MCP for Spinning Reserve multiplied by Market Participant Actual Energy Withdrawal, excluding Carved-Out GFA Actual Energy Withdrawal and including real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources, within the Binding Settlement Zone; and

Total Actual Non-GFA Energy Withdrawals = The sum of all Market Participant Actual Energy Withdrawals, excluding Carved-Out GFA Actual Energy Withdrawals and including real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources, within the Binding Settlement Zone.

B. Non-Binding Settlement Zone Spinning Reserve Charge

Market Participants, and Carved-Out GFA billing entities associated with Carved-Out GFAs, with Actual Energy Withdrawals and real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources, within a Non-Binding Settlement Zone shall be charged each Hour, a pro-rata share of the total payments

to Market Participants for Resources providing Spinning Reserve within that Non-Binding Settlement Zone for that Hour as follows:

Costs allocated to Carved-Out GFAs:

Carved-Out GFA Spinning Reserve Charge = GFA Spinning Reserve Procurement Rate multiplied by the MP Actual Energy Withdrawal minus the applicable Day-Ahead Ex Post MCP for Spinning Reserve or Hourly Real-Time Ex Post MCP for Spinning Reserve multiplied by the Minimum of [Spinning Reserve schedules associated with the Carved-Out GFA, and the MP Carved-Out GFA Spinning Reserve Obligation] for the Non-Binding Settlement Zone,

Where:

GFA Spinning Reserve Procurement Rate = Spinning Reserve Procurement Cost / Total Actual Energy Withdraw in the Non-Binding Settlement Zone;

Spinning Reserve Procurement Cost = The sum of all credits calculated under Section 39.3.2A.b plus the sum of all charges/credits calculated under Section 40.3.3.3.b.iii specific to

Resources providing Spinning Reserve within the
Non-Binding Settlement Zone;

MP Actual Energy Withdrawal =

Market Participant Actual Energy Withdrawal,
associated with Carved-Out GFA Actual Energy
Withdrawal and including real-time Export
Schedules, other than Coordinated Transaction
Schedules and Export Schedules for External
Asynchronous Resources, within the Non-Binding
Settlement Zone;

Total Actual Energy Withdrawal =

The sum of all Market Participant Actual Energy
Withdrawals, including Carved-Out GFA Actual
Energy Withdrawals and including real-time Export
Schedules, other than Coordinated Transaction
Schedules and Export Schedules for External
Asynchronous Resources, within the Non-Binding
Settlement Zone; and

MP Carved-Out GFA Spinning Reserve Obligation = MP Carved-Out GFA Actual Energy

Withdrawal divided by Total Actual Energy

Withdrawal within the Non-Binding Settlement

Zone multiplied by the sum of all Spinning Reserve
schedules within the Non-Binding Settlement Zone.

Costs allocated to Non-GFA Withdrawals:

Spinning Reserve Charge non-GFA = Non-GFA Spinning Reserve Procurement
Rate * MP Actual Energy Withdrawal for
the Non-Binding Settlement Zone,

Where:

Non-GFA Spinning Reserve Procurement Rate = The difference between the Non-GFA Spinning
Reserve Procurement Cost and the aggregate sum of
all Carved-Out GFA Spinning Reserve Charges
divided by Total Actual Non-GFA Energy
Withdrawals within the Non-Binding Settlement
Zone;

Non-GFA Spinning Reserve Procurement Cost = The sum of all credits calculated under Section
39.3.2A.b plus the sum of all charges/credits
calculated under Section 40.3.3.3.b.iii specific to
Resources providing Spinning Reserve minus the
aggregate sum of the applicable Day-Ahead Ex Post
MCP for Spinning Reserve or Hourly Real-Time Ex
Post MCP for Spinning Reserve multiplied by the
Minimum of [Spinning Reserve schedules
associated with the Carved-Out GFA, and the MP
Carved-Out GFA Spinning Reserve Obligation] for
all GFA billing entities within the Non-Binding
Settlement Zone;

MP Actual Energy Withdrawal = Market Participant Actual Energy Withdrawal, excluding Carved-Out GFA Actual Energy Withdrawal and including real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources, within the Non-Binding Settlement Zone; and

Total Actual Non-GFA Energy Withdrawals = The sum of all Market Participant Actual Energy Withdrawals, excluding Carved-Out GFA Actual Energy Withdrawals and including real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources, within the Non-Binding Settlement Zone.

IV. PROVISIONS TO SATISFY SPINNING RESERVE OBLIGATIONS VIA SELF-SCHEDULES

A Market Participant may Self-Schedule from their Spin Qualified Resources in the Energy and Operating Reserve Markets to meet their hourly Market-Wide Spinning Reserve Obligation. A Market Participant's hourly Market-Wide Spinning Reserve Obligation shall be equal to the Market-Wide Spinning Reserve Requirement multiplied by the ratio of the Market Participant's Actual Energy Withdrawals, including real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources,

to MISO Balancing Authority Load, including real-time Export Schedules, other than Coordinated Transaction Schedules and Export Schedules for External Asynchronous Resources. Such Self-Scheduled Spinning Reserve shall be compensated at the applicable Spinning Reserve Market Clearing Price for that Resource pursuant to Sections 39 and 40 of this Tariff.