

# Member Impacting Project Overview

## Multi-Day Minimum Run Time

Version 2.1

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**Version Control**

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Change Description</b>
1.0	04/07/2023	SPP	Initial version
2.0	07/06/2023	SPP	Added information related to RR569 and updated the training section. Updated the member testing details to add additional information around testing dates, settlement scenarios, and the member testing kick-off call.
2.1	08/24/2023	SPP	Added new MP facing issue

## Executive Summary

This release will include updates to the Settlement Management System (SMS) to include the following Revision Requests:

- RR382 – Multi-Day Minimum Run Time and Clarifications
- RR540 – Multi-Day Min Run Time Settlement Calculations Clean-Up
- RR569 – Multi-Day Min Run Time Additional Calculations Clean-Up

Additionally, the release will include other defect fixes and/or enhancements. In this document the term “members” refers to any and all stakeholders which could include market participants, members, customers, transmission owners, vendors, etc.

## Business Impact

Affected?	Services Impacted by Changes
X	Eastern Interconnection (Integrated Marketplace / Transmission)
	Western Reliability Coordination
	Western Energy Imbalance Services Market

### RR382 – Multi-Day Minimum Run Time and Clarifications

The objective of this RR is implement corrections identified by SPP Market Monitoring Unit (MMU) due to potential gaming issues with Make-Whole Payments (MWP) and Resources that have a Minimum Run Time that extends beyond the initial RUC or Day-Ahead Market commitment period. When these Resources increase their Energy Offers for Minimum and/or No Load, the market would not de-commit them and they could receive MWP based on the higher offers for the duration of the Resource’s Minimum Run Time.

These modifications will allow Resources committed by the market that have a Minimum Run Time that extends beyond the initial RUC or Day-Ahead commitment period to be eligible for MWP’s after their initial commitment period based on the following rules:

- A) From the time in a continuous set of commitments at which the SCUC process does not consider economics but extends a Resource commitment to honor its Minimum Run Time, and through the remainder of the Resource’s applicable Minimum Run Time, the following Resource offers apply toward a Make-Whole Payment Amount except for Resources committed either initially or previously by SPP, or at the request of a local transmission operator to solve a Local Reliability Issue or previously committed by a local transmission operator to address a Local Emergency Condition:
  - i. The No-Load Offer used to determine a Make-Whole Payment Amount shall be the lesser of (a) the No-Load Offer in effect at the time the decision was made to commit or transition the Resource, or (b) the mitigated No-Load Offer in effect at the time the decision was made to commit, extend, or transition the Resource;
  - ii. The Energy Offer Curve used to determine a Make-Whole Payment Amount for Energy between zero (0) MWh(s) and the Minimum Economic Capacity Operating Limit shall be the lesser of (a) the Energy Offer Curve in effect at the time the decision was made to commit, extend, or transition the Resource, or (b) the Mitigated Energy Offer Curve in effect at the time the decision was made to commit or transition the Resource;

- iii. The Energy Offer Curve used to determine a Make-Whole Payment Amount for Energy above the Minimum Economic Capacity Operating Limit shall be the Energy Offer Curve in effect at the time of the solution.
- B) From the time in a continuous set of commitments at which the SCUC process does not consider economics but extends a Resource commitment to honor its Minimum Run Time, and for the remainder of a Resource's applicable Minimum Run Time, only the portion of a Resource's start-up costs carried forward from a previous commitment will be eligible for recovery as part of a Make-Whole Payment Amount, and only revenue up to those start-up costs carried forward will be considered as part of a Make-Whole Payment Amount when:
- i. The sum over the hours used by the SCUC process to make the commitment of the Resource's (a) Start-Up Offer, (b) Transition State Offer, (c) No-Load Offer, and (d) Energy Offer Curve between zero (0) MWh(s) and Minimum Capacity Operating Limit is less than
  - ii. The sum over the hours used by the SCUC process to make the commitment of the Resource's mitigated (a) Start-Up Offer, (b) Transition State Offer, (c) No-Load Offer, and (d) Energy Offer Curve between zero (0) MWh(s) and Minimum Capacity Operating Limit.

For an MCR, the applicable Minimum Runtime is the greater of (a) Minimum Run Time, (b) Group Minimum Run Time, or (c) Plant Minimum Run Time.

RR382 includes changes to the Integrated Marketplace Protocols and the SPP Tariff and is available in the [Revision Requests](#) folder on SPP.org. This RR was approved by the MWG on 10/22/2019, the RTWG on 10/24/2019, and the MOPC on 01/14/2020.

### **RR540 – Multi-Day Min Run Time Settlement Calculations Clean-Up**

The objective of this RR is to ensure governing language is consistent with the design and intent of all RRs previously approved prior to the implementation of RR382. Please note that RR540 also includes a minor protocol revision to RT Uncertainty Reserve Non-Performance Amount for implementation with the Uncertainty Product Release. Those changes are included in the MIPO for Uncertainty Product which is being implemented prior to this release.

RR540 includes changes to the Integrated Marketplace Protocols and the SPP Tariff and is available in the [Revision Requests](#) folder on SPP.org. This RR was approved by the MWG on 02/15/2023, the RTWG on 02/23/2023, and the MOPC on 04/10/2023.

### **RR569 – Multi-Day Min Run Time Additional Calculations Clean-Up**

During the testing phase of RR382, RR540 (Multi-day Minimum Run Time), additional Settlements Integrated Marketplace Protocol corrections were discovered that need to be corrected prior to implementation. RR569 includes changes to the Integrated Marketplace Protocols and is available in the [Revision Requests](#) folder on SPP.org. This RR was approved by the MWG on 06/20/2023. It is currently pending MOPC approval.

RR382, RR540, and RR569 include changes to 2 existing settlement charge types in the following protocols sections:

- 4.5.8.12 – Day-Ahead Make Whole Payment Amount
- 4.5.9.8 – RUC Make Whole Payment Amount

## Settlement Defect Fixes and Enhancements

Any additional defects or enhancements to be delivered with this project will be listed here:

ID	Summary	Comments
ITSETL-10549	RtMwpStartupTransAmt report type is changing from the 5 min report to the Hourly/Daily Report and will be on the AO Hourly/Daily Determinant Report.	The report type is changing so the determinant will be produced on the AO Hourly/Daily Determinant report. If you currently pull the AO determinant report all values, there is no impact. If you pull either the 5 min. or Hourly/Daily report this determinant will now be on the Hourly report instead of the 5 min. report.

### **Users Impacted**

- Market Participants and Asset Owners
- Shadow Settlement Vendors

### **Business Functions Impacted**

- Settlement Calculations

## Technical Impact

This section identifies the high-level anticipated technical impacts to SPP and members' systems and processes as a result of the changes described in the [Business Impact](#) section.

### **SPP Systems/Processes Impacted**

- Settlement Management System
- Settlement Calculations

### **Anticipated Member Systems/Processes Impacted**

Member and vendor-developed systems that utilize the following may be impacted by this project:

- Shadow Settlements

### **Web Services Effective/Retirement Dates**

There are no web service updates associated with this project.

## Member Requirements

Members' systems and processes, including shadow settlement systems, should be updated in support of the changes described in the [Business Impact](#) section.

## Testing

Member testing for this project will occur for eight weeks in the MTE (Member Test Environment) and include operating dates July 12<sup>th</sup> through September 5<sup>th</sup>. Market Participants should submit/update data (bids/offer for markets, meter/bilateral schedules for settlements) in order to test specific scenarios. Otherwise, markets will use the last submitted data for offers and bids, and settlements will use state estimator for meter.

**Resource-owning market participants will be responsible for ensuring the settlement scenarios are created based on the offer data and parameters they submit in the MTE environment during the member testing period.** Full details on those scenarios are included in this section of the MIPO. A scorecard will not be produced.

The following data will be provided in support of this testing:

- Settlement reports will be posted for Operating Dates 07/12/2023 – 09/05/2023.
  - The first operating day (07/12/2023) will post on Tuesday, 07/19/2023.
  - The last operating day (09/05/2023) will post on Tuesday, 09/12/2023.
- An accelerated calendar will be used in MTE so that the **S53 posts 35 days** after the operating date. **Please note that there will be no S120s posted for this project.** The first four weeks of member testing will contain only S7s and the last four weeks will contain S7s and S53s. The last settlement posting in MTE will occur on 09/12/2023 for the following:
  - S7 posting for Operating Date 09/05/2023
  - S53 posting for Operating Date 08/08/2023
- As a result of the accelerated calendar, BSS and Meter due dates are shifted up for S53. All due dates will be listed on the settlement calendar posted to the MTE Portal.
- Market invoices will be posted weekly starting on 07/27/2023 and continuing through 09/14/2023.

An updated Settlements Calendar will be available in MTE Portal prior to the member testing kick off meeting: <https://portal-mte.itespp.org/pages/settlement-calendars>.

Testing Assumptions:

- All MPs should have already conducted connectivity testing to the appropriate Integrated Test Environment, Member Test Environment (MTE). This project timeline will not include connectivity testing.
- MP staff who are participating in the testing are trained on the systems they are testing.
- Resource-owning MPs will be responsible for creating the testing scenarios based on the data they submit to the MTE Environment.

### **Day Ahead Settlement Scenarios**

Resource owning Market Participants participating in testing Multi-Day Minimum Run Time will need to update offer data in the MTE portal in order to see results of the settlement changes for this project. Market Participants can use multiple resources for this testing to maximize efficiency. Day Ahead offers should be updated by 9:30 CPT. The following offer data should be reviewed and updated during the testing timeline:

- Energy Offers for Day Ahead
- Mitigated Energy Offers for Day Ahead
- No Load Offer for Day Ahead
- Mitigated No Load Offer for Day Ahead
- Startup (Cold, Hot, Intermediate) Offer for Day Ahead
- Mitigated Startup Offer for Day Ahead
- Resource should submit commit status of Market for Day Ahead
  - Ensure offers are economical (less than 10.00) to help with being committed

The bid-to-bill Market Participant testing of Multi-Day Minimum Run Time in MTE, will consist of running Market studies and settling the Market during the specified time. The scenarios outlined below are considered guidelines

on submitting offer data that could be used in the Market studies and settled. Scenario results will depend on resource commitment in Day Ahead and Reliability Unit Commitment (RUC) studies.

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*Day Ahead Scenarios (for multiple operating days)*

**DA Scenario 1 (Commitment greater than 24 hours with no change in min run time; eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time greater than 24 hours. The Day Ahead Resource offers (Energy, Startup, and No Load) should be greater than or equal to the Day Ahead Mitigated Resource offers (Energy, Startup, and No Load).

- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less

**Expected results:** Operating day one along with days after the min run time is met will be eligible for a non-mitigated MWP (normal). Operating days two thru min run time will be eligible for a Mitigated MWP.

**DA Scenario 2 (Commitment greater than 24 hours with no change in min run time; NOT eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time greater than 24 hours. The Day Ahead Resource offers (Energy, Startup, and No Load) should be less than Day Ahead Mitigated Resource offers (Energy, Startup, and No Load).

- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less

**Expected results:** Operating day one along with days after the min run time is met will be eligible for a non-mitigated MWP (normal). Operating day two thru min run time will not be eligible for a Day Ahead MWP.

**DA Scenario 3 (Commitment greater than 24 hours with a change in min run time; eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time for two days. After the Resource has been committed in a Day Ahead Market, the minimum run time should be updated to be greater than the current online time (extend the min run time for a few more days). The Day Ahead Resource offers (Energy, Startup, and No Load) should be greater than or equal to the Day Ahead Mitigated Resource offers (Energy, Startup, and No Load).

- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less
- Example:
  - On OD 1 min run time is submitted for 48 hours
  - Unit is committed for 48 hours
  - On OD 2 (next Day Ahead Market) min run time is submitted for 72 hours

**Expected Results:** Operating day one along with days after the min run time is met will be eligible for a non-mitigated MWP (normal). Operating days two thru min run time will be eligible for a Mitigated MWP.

**DA Scenario 4 (Commitment greater than 24 hours with a change in min run time; NOT eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time for two days. After the Resource has been committed in a Day Ahead Market, the minimum run time should be updated to be greater than the current online time (extend the min run time for a few more days). The Day Ahead Resource offers (Energy, Startup, and No Load) should be less than the Day Ahead Mitigated Resource offers (Energy, Startup, and No Load).



- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less
- Example:
  - On OD 1 min run time is submitted for 48 hours
  - Unit is committed for 48 hours
  - On OD 2 (next Day Ahead Market) min run time is submitted for 72 hours

**Expected Results:** Operating day one along with days after the min run time is met will be eligible for a non-mitigated MWP (normal). Operating day two thru min run time will not be eligible for a Day Ahead MWP.

### **RUC Settlement Scenarios**

Resource-owning Market Participants participating in testing Multi-Day Minimum Run Time will need to update offer data in the MTE portal in order to see results of the settlement changes for this project. Market Participants can use multiple resources for this testing to maximize efficiency. Real Time offers should be updated by 30 minutes prior to the start of the next hour. The following offer data should be reviewed and updated during the testing timeline in the Member Testing Environment (MTE) for Multi-day testing:

- Energy Offers for Real-Time
- Mitigated Energy Offers for Real-Time
- No Load Offer for Real-Time Energy
- Mitigated No Load Offer for Real-Time Energy
- Startup Offer for Real-Time Energy
- Mitigated Startup Offer for Real-Time Energy
- Resource should submit commit status of Market for Real Time
  - Ensure offers are economical (less than 10.00) to help with being committed
  - Ensure commit status for **Day Ahead** is in Not Participating

#### *RUC Scenarios (multiple commitments for the same OD)*

**RUC Scenario 1 (Commitment with a min run time between two and four hours with no change in min run time; eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time greater than 2 and less than 4 hours. The Real Time Resource offers (Energy, Startup, and No Load) should be greater than or equal to the Real Time Mitigated Resource offers (Energy, Startup, and No Load).

- Update Day Ahead Status to Not Participating
- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less

**Expected results:** First RUC commitment along with the days after min run time is eligible for a normal MWP, the second RUC commitment up to min run time will be eligible for a mitigated MWP.

**RUC Scenario 2 (Commitment with a min run time between two and four hours with no change in min run time; eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time greater than 2 and less than 4 hours. The Real Time Resource offers (Energy, Startup, and No Load) should be less than the Real Time Mitigated Resource offers (Energy, Startup, No Load).

- Update Day Ahead Status to Not Participating
- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less

**Expected results:** First RUC commitment along with the days after min run time is eligible for a normal MWP, the second RUC commitment up to min run time will not be eligible for a mitigated MWP.

**RUC Scenario 3 (Commitment with a min run time between two and four hours and update min run time after a RUC commitment occurs and before the min run time is met; eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time greater than 2 and less than 4 hours. After the Resource has been committed in a RUC study, the minimum run time should be updated to be greater than the current commit time (extend the min run time for a few more hours). The Real Time Resource offers (Energy, Startup, and No Load) should be greater than or equal to the Real Time Mitigated Resource offers (Energy, Startup, and No Load).

- Update Day Ahead Status to Not Participating
- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less
- Example:
  - On OD 1 min run time is submitted between 2-4 hours
  - Unit is committed
    - Update min run time greater than current commit time

**Expected Results:** First RUC commitment along with the days after min run time is eligible for a normal MWP, the second RUC commitment up to min run time will be eligible for a mitigated MWP.

**RUC Scenario 4 (Commitment with a min run time between two and four hours and update min run time after a RUC commitment occurs and before the min run time is met; NOT eligible for mitigated MWP):** This scenario should include submission of energy offers with a minimum run time greater than 2 and less than 4 hours. After the Resource has been committed in a RUC study, the minimum run time should be updated to be greater than the current commit time (extend the min run time for a few more hours). The Real Time Resource offers (Energy, Startup, and No Load) should be less than the Real Time Mitigated Resource offers (Energy, Startup, and No Load).

- Update Day Ahead Status to Not Participating
- Min Down Time should be 30 min. or less
- Startup (Cold, Intermediate, Hot) should be 5 min or less
- Verify Weekly starts is updated to 10 or higher
- Synch to min 5 min or less
- Example:
  - On OD 1 min run time is submitted between 2-4 hours
  - Unit is committed
    - Update min run time greater than current commit time

**Expected Results:** First RUC commitment along with the days after min run time is eligible for a normal MWP, the second RUC commitment up to min run time will **NOT** be eligible for a mitigated MWP.

Market participants are responsible for creating scenarios based on their offer data and reviewing the results of each scenario to understand the impacts to their organization prior to production implementation. A scorecard will not be produced.

**Member Testing Kickoff**

The Multi-Day Min Run Time Member Testing Kick-off Call will occur on Monday, July 10<sup>th</sup>, at 2:00pm Central Time. This meeting has been added to the SPP calendar and is available for registration via this link: <https://www.spp.org/calendar-list/rr382-multi-day-min-run-time-member-testing-kick-off-net-conference-20230710/>.

**Training**

SPP Stakeholder Training will provide a brief review and high-level example of the Multi-Day Minimum Run Time project during the testing kick-off meeting. In addition, stakeholders can expect to have access to a self-study course by the Go-Live date.

Attendees will access this self-study course via the SPP Learning Center. Stakeholder Training will send out an announcement when it is available.

As course materials are developed, the objectives for the training and approximate release date will be provided.

**Training Assumptions:**

- All member companies will identify personnel to receive project-related training and/or documentation.
- All member companies will use the [SPP Learning Center \(LMS\)](#) to register for any project-related training sessions, if applicable.
- SPP Training will provide learning opportunities that aid understanding, but each entity will be expected to certify performance readiness.

**Implementation/Back-out Plan**

Application system changes will be implemented in coordination with the testing phase, web service activation/retirement dates and Production effective dates defined in the project timeline. In the event critical issues arise, SPP will work to resolve the issues and, if required, execute applicable back-out procedures defined for each application.

**Summary of Timeline**

Date	Responsible Party	Action
7/25/2022 – 11/16/2022	SPP	Requirements, Design, Build
4/07/2023	SPP	Publish Initial MIPO
7/06/2023	SPP	Publish MIPO v2 with additional testing and training details

Date	Responsible Party	Action
7/10/2023	SPP / Member	Member Testing Kick-off Meeting
7/12/2023 – 9/05/2023	SPP / Member	Member Testing in MTE (Member Test Environment)
10/1/2023	SPP / Member	Effective date in Production

## Project Assumptions

None identified at this time.

## Risks

None identified at this time.

## Additional Documentation

- [RR540 – Multi-Day Min Run Time Settlement Calculations Clean-Up](#)  
 Provides Market Participants with the settlement calculation revisions needed to shadow the charge types impacted by [RR382](#). *Note: RR540 also includes revisions to an uncertainty product charge type which is being implemented with the uncertainty product project.*
- [RR569 – Multi-Day Min Run Time Additional Calculations Clean-Up](#)  
 Provides Market Participants with some additional settlement calculation revisions needed to shadow the charge types impacted by [RR382](#) and RR540.

## Communication Plan

Communication about the project will be provided via the Change User Forum meetings and updates to the MIPO.

## MIPO and Project Documentation

All project information will be posted to the [Multi-Day Min Run Time](#) folder under Change User Forum Project Documentation on SPP.org.

This MIPO will be updated periodically as new information is available. With any update, a redline version will be posted to the project documentation folder, and the CUF will be notified.

## Next Steps

Action	Assignee	Dates
Members (and vendors) become familiar with the changes included in this MIPO and determine potential impacts to their processes.	MP	Now

Action	Assignee	Dates
Schedule resources to test during the Member Testing timeframe	MP	Now
Members (and vendors) complete shadow settlement development based on the settlement calculation changes (RRs) included with this project and be prepared to verify results during member testing.	MP	7/11/2023
Resource-owning MPs submit offers based on the guidelines in the testing section of this MIPO in order to produce the settlement scenarios as outlined.	MP	7/11/2023-9/12/2023
Access and download the settlement results in MTE and verify the changes (if applicable).	MP	7/12/2023 – 9/12/2023

### FAQs


Frequently asked questions will be added to the document as identified or necessary.

Question	Answer

### More Information

At any time, members can ask questions by completing an RMS ticket: <https://spprms.issuetrak.com/login.asp>. Select the “Submit an Inquiry” Request Template followed by the Subtype 1 of “Projects / Initiatives”, and Subtype 2 of “Multi-Day Min Run Time”.

If a new user ID is needed for RMS, click on that link and follow the directions for “Register Now.”

**Submit Request** 

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Request Template:

\* Class:

Request Status:

\* Request Type:

\* Subtype 1:

\* Subtype 2:

\* Subtype 3: