

# Member Impacting Project Overview

## PMU Hardware Replacement and Increasing System Availability

Version 2.0

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**Version Control**

Version	Date	Author	Change Description
1.0	11/30/2021	Tennille Tims	Initial MIPO
2.0	3/09/2022	Tennille Tims	Updated with Cutover Information

**Executive Summary**

In this document the term “members” refers to any and all stakeholders which could include market participants, members, customers, transmission owners, vendors, etc.

Support for existing PMU servers end in spring 2022 and must be replaced. As we looked at our future needs, it was determined that an increase system availability would benefit SPP. The WECC IRO-002-6 requires SPP West RC operators to view oscillation alarms and provide visualizations of oscillations. SPP is currently using the RTDMS client to be compliant on this west standard. With our current system, simple system updates like server patching can cause a system outage where SPP must rely on neighboring RCs to monitor oscillations. A system with increased availability will help transition SPP from a single site to a higher available system.

## Business Impact

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

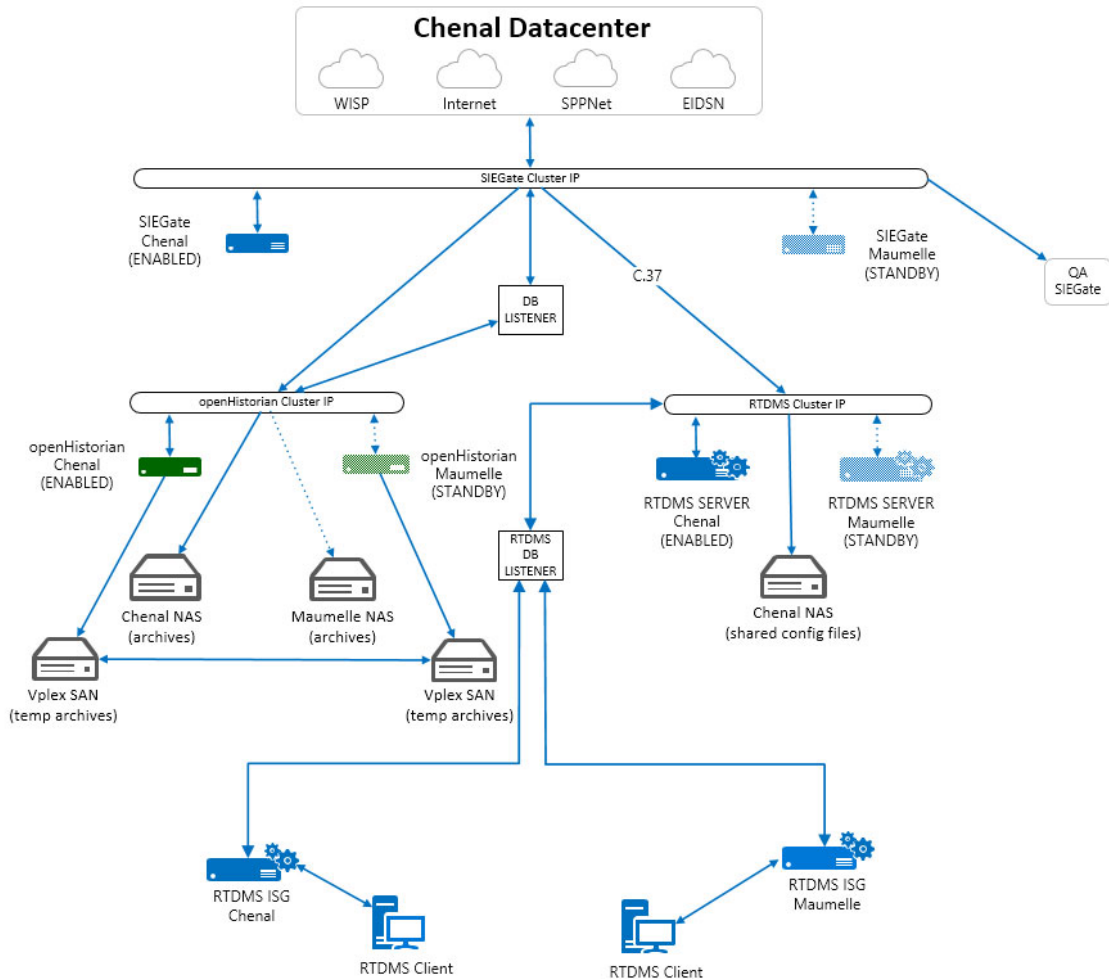
### ***Users Impacted***

Members identified as sending and/or receiving PMU data with SPP may need to update IP addresses, firewall rules, and Phasor Data Concentrator configurations.

### ***Business Functions Impacted***

There are no anticipated business impacts.

**Technical Impact**



**SPP Systems/Processes Impacted**

There are no process impacts related to this effort. The only system changes are new hardware and increased availability.

**Anticipated Member Systems/Processes Impacted**

Participants will need to make changes to IPs, firewall rules, and PDC configurations.

## Member Requirements

Members identified as sending and/or receiving PMU data with SPP may need update IP addresses, firewall rules, and Phasor Data Concentrator configurations.

### SPPNET

- Basin
- NPPD
- SPS
- WAPA RMR
- WFEC

### March Changes

- Current: your firewall trusts a single SPP IP address for PDC communications
- Action: add firewall rule to trust new SPP Primary IP address
- Action: add firewall rule to trust new SPP Backup IP address

### April Connection Testing

- Reach out to SPP after firewall rules are in place
- SPP will use the GPA PMU Connection Tester and/or telnet to validate connectivity
- SPP will get name and phone number of support person if there are issues for May 2 go live

### May 2 Go Live Changes

- NONE. All changes are on the SPP side.

### June Post Go Live Changes

- Remove your firewall rule for SPP's old single IP address. SPP will advise when.
- 

## INTERNET

- OGE
- Evergy

### March changes

- Current: your firewall trusts a single SPP IP address for PDC communications
- Action: add firewall rule to trust new SPP Primary IP address
- Action: add firewall rule to trust new SPP Backup IP address

### April Connection Testing

- Reach out to SPP after firewall rules are in place
- SPP will use telnet to validate connectivity
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- NONE. All changes are on the SPP side.
-

**June Post Go Live Changes**

- Remove your firewall rule for SPPs old single IP address. SPP will advise when.
- 

**VPN**

- AEP
- Liberty (North Fork)
- Liberty (King's Point)

**March changes**

- Current: your firewall trusts a single SPP IP address for PDC communications
- Action: add firewall rule to trust new SPP Primary IP address
- Action: add firewall rule to trust new SPP Backup IP address

**April Connection Testing**

- Reach out to SPP after firewall rules are in place.
- SPP will use the GPA PMU Connection Tester and/or telnet to validate connectivity
- SPP get name and phone number of support person if there are issues for May 2 go live

**May 2 Go Live Changes**

- NONE. All changes are on the SPP side.

**June Post Go Live Change**

- Remove your firewall rule for SPPs old single IP address. SPP will advise when.
- 

**EIDSN**

- MISO
- PJM
- ISONE
- TVA

**March changes**

- Current: your firewall trusts a single IP address for INBOUND connections from SPP's PDC (SPP Subscriber)
  - Action: add firewall rule to trust new SPP Primary IP address
  - Action: add firewall rule to trust new SPP Backup IP address
  
  - Current: your firewall targets a single IP address for OUTBOUND connections to SPP's PDC (SPP Publisher)
  - Action: add firewall rule to trust new SPP Primary Cluster IP address
  - Action: add firewall rule to trust new SPP Backup Cluster IP address
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**April Connection Testing**

- Reach out to SPP after firewall rules are in place.
- SPP will use telnet and/or PMU Connection Tester to validate connectivity to participant
- Participant can use telnet to validate connectivity to SPP's Cluster IP address
- SPP get name and phone number of support person if there are issues for May 2 go live

**May 2 Go Live Changes**

- SPP Subscriber connection, NONE. All changes are on the SPP side.
- Participant subscriber connection, change target IP to new SPP Primary Cluster IP address. No port changes.

**June Post Go Live Change**

- Remove your firewall rule for SPPs old single IP address. SPP will advise when.
- 

**WISP - SPP Customers sending data to SPP UDP**

- Tristate
- TEP

**March changes**

- Current: your firewall trusts a single SPP IP address for PDC communications
- Action: add firewall rule to trust new SPP Primary Cluster IP address
- Action: add firewall rule to trust new SPP Backup Cluster IP address

**April Connection Testing**

- Reach out to SPP after firewall rules are in place.
- SPP will use PMU connection tester to validate participant can send data to new Primary Cluster IP address
- If participant's PDC will support it, set up constant UDP stream to both current SPP PROD and new SPP Primary Cluster IP address
  - SPP will not "listen" on the new Primary Cluster IP address until May 2.
  - No data should be sent to SPP Backup Cluster IP address at this time
- SPP get name and phone number of support person if there are issues for May 4 go live

**May 2 Go Live Changes**

- If participant was able to set up dual UDP blast in April, nothing to do today.
- If participant was unable to set up dual UDP blast in April, change to Primary Cluster IP address when directed by SPP.

**June Post Go Live Change**

- Remove your firewall rule for SPPs old single IP address. SPP will advise when.
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## **WISP - CAISO sending data to SPP UDP**

- CAISO

### **March changes**

- Current: your firewall trusts a single SPP IP address for PDC communications
- Action: add firewall rule to trust new SPP Primary Cluster IP address
- Action: add firewall rule to trust new SPP Backup Cluster IP address

### **April Connection Testing**

- Reach out to SPP after firewall rules are in place.
- SPP will use PMU connection tester to validate participant can send data to new Primary Cluster IP address
- If participant's PDC will support it, set up constant UDP stream to both current SPP PROD and new SPP Primary Cluster IP address
  - Assuming there is bandwidth to support this, have to ask CAISO
  - SPP will not "listen" on the new Primary cluster IP address until May 2.
  - No data should be sent to SPP Backup at this time. Both CAISO systems should send to SPP Primary Cluster IP address.
- SPP get name and phone number of support person if there are issues for May 4 go live

### **May 2 Go Live Changes**

- If participant was able to set up dual UDP blast in April, nothing to do today.
- If participant was unable to set up dual UDP blast in April, change to Primary Cluster IP address when directed by SPP.

### **June Post Go Live Change**

- Remove your firewall rule for SPPs old single IP address. SPP will advise when.
- 

## **WISP - SPP sending data to CAISO UDP**

- CAISO

### **March changes**

- Current: your firewall trusts a single SPP IP address for PDC communications
- Action: add firewall rule to trust new SPP Primary IP address
- Action: add firewall rule to trust new SPP Backup IP address

### **April Connection Testing**

- Reach out to SPP after firewall rules are in place.
- Participant can determine how to test receipt of data
- SPP get name and phone number of support person if there are issues for May 4 go live

### **May 2 Go Live Changes**

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- NONE. SPP will stop sending from old IP and start sending from new Primary IP address.

**June Post Go Live Change**

- Remove your firewall rule for SPPs old single IP address. SPP will advise when.

**Testing**

***Connectivity Testing***

SPP will conduct connectivity testing for 2 weeks in April 2022.

***Parallel Ops***

SPP will run parallel ops prior to retirement of the current hardware. Parallel ops is planned to occur in April and May of 2022.

**Training**

There is no training planned for this project.

**Implementation/Back-out Plan**

If issues are encountered during switch overs, Phasor Data Connections will be moved back to the current system.

**Summary of Timeline**

<b>Date</b>	<b>Responsible Party</b>	<b>Action</b>
11-01-2021	SPP	Requirements, design, build
03-10-2022	SPP	Publish Member requirements via MIPO revision
03-30-2022	SPP	Schedule Connectivity Testing Appointments
04-04-2022 to 05-01-2022	SPP / Member	Parallel Ops
05-02-2022	SPP / Member	Implementation

**Project Assumptions**

There is an assumption that all members who have a Phasor Data Connection with SPP will participate in this project and complete requested tasks without delay.

## Risks

None identified at this time.

## Additional Documentation

Any additional documentation will be listed and stored in the [PMU Hardware Replacement](#) project folder on spp.org. Notifications of documentation postings will be sent to the CUF distribution list. There will also be updates to the PMU Communication Handbook located [here](#).

## Communication Plan

Communication regarding this project will be done through updates to the Member Impacting Project Overview or via the Change User Forum exploder list.

### ***MIPO and Project Documentation***

All project communication and information will be posted to the SPP Change User Forum Project Documentation folder.

Click [here](#) to reach the [PMU Hardware Replacement](#) folder on spp.org.

This MIPO will be updated upon change or with any new information, and according to the Member Project Touch Points and Deliverables. With any update, a redline version will be posted to the project documentation folder, and the CUF will be notified.

## Next Steps

Action	Assignee	Status & Due Date
Add/Trust new IPs	Participants	04-01-2022
Connectivity Testing	SPP / Members	04-04-2022 to 04-22-2022
Cutover to new PMU system	SPP	5-02-2022

## FAQs

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

Question	Origination	Answer

## More Information

At any time, members can ask questions by completing an RMS ticket using "Project Inquiries" Quick Pick and this project's subject option. RMS link: <https://spprms.issuetrak.com/login.asp>

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

The process for submitting an RMS ticket is to click "Submit an Inquiry" from the Request Template dropdown menu, then Subtype 1: Projects / Initiatives, and Subtype 2: PMU Hardware Replacement.

## Submit Request

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Request Template:  ▼

\* Class:  ▼

Request Status:  ▼

\* Request Type:  ▼

\* Subtype 1:  ▼

\* Subtype 2:  ▼